AS 2609.1—2005
ISO 13302:2003

AS 2609.1—2005

Australian Standard™

# Methods for assessing modifications to the flavour of foodstuffs due to packaging

## Method 1: Sensory analysis



This Australian Standard was prepared by Committee FT-022, Sensory Analysis. It was approved on behalf of the Council of Standards Australia on 16 September 2005.
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The following are represented on Committee FT-022:

Australian Associated Brewers
Australian Food and Grocery Council
Australian Institute of Food Science and Technology Limited
Australian Paint Manufacturers' Federation
Australian Society of Cosmetic Chemists
Australian Wine and Brandy Corporation
Department of Primary Industries and Fisheries Queensland
Food Science Australia
Food Technology Association of Victoria
National Association of Testing Authorities Australia
RMIT University

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Australian Standard™

# Methods for assessing modifications to the flavour of foodstuffs due to packaging

## Method 1: Sensory analysis

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# PREFACE

This Standard was prepared by the Standards Australia Committee FT-022, Sensory Analysis to supersede AS 2609.1—1983, *Materials used for the packaging of food and beverages—Methods for the assessment of odour and taint—Sensory methods.*

This Standard is identical with and reproduced from ISO 13302:2003, *Sensory analysis—Methods for assessing modifications to the flavour of foodstuffs due to packaging.*

The objective of this Standard is to provide methods for assessing the changes caused by packaging to the sensory attributes of foodstuffs or their simulants.

The methodology can be used as initial selection to assess a suitable packaging material or as subsequent acceptability screening of individual batches/production run (see Annex A).

It is applicable to all materials usable for packaging foodstuffs (e.g. paper, cardboard, plastic, foils, wood). Moreover, the scope can be extended to any objects intended to come into contact with foodstuffs (e.g. kitchen utensils, coatings, leaflets, or parts of equipment such as seals or piping) with the aim of controlling food compatibility from a sensory point of view.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

(d) Substitute 'mL' for 'ml' wherever it appears.

References to International Standards should be replaced by references to equivalent Australian Standards as follows:

| *Reference to International Standard* | | *Australian Standard* | |
|---|---|---|---|
| ISO | | AS | |
| 483 | Plastics—Small enclosures for conditioning and testing using aqueous solutions to maintain relative humidity at constant value | — | |
| 4120 | Sensory analysis—Methodology—Triangle test | 2542<br>2542.2.2 | Sensory analysis<br>Method 2.2: Specific methods—Triangle test |
| 5492 | Sensory analysis—Vocabulary | 2542.3 | Part 3: Glossary of terms |
| 5495 | Sensory analysis—Methodology—Paired comparison test | 2542.2.1 | Method 2.1: Specific methods—Paired comparison test |
| 6564 | Sensory analysis—Methodology—Flavour profile methods | — | |
| 8586 | Sensory analysis—General guidance for the selection, training and monitoring of assessors | 2542.1.3 | Method 1.3: Selection of assessors |
| 8586-1 | Part 1: Selected assessors | | |
| 8586-2 | Part 2: Experts | — | |
| 8587 | Sensory analysis—Methodology—Ranking | 2542.2.6 | Method 2.6: Specific methods—Ranking |

| ISO | | AS | |
|---|---|---|---|
| 8589 | Sensory analysis—General guidance for the design of test rooms | — | |
| 10399 | Sensory analysis—Methodology—Duo-trio test | 2542.2.4 | Method 2.4: Specific methods—Duo-trio test |
| 11035 | Sensory analysis—Identification and selection of descriptors for establishing a sensory profile by multidimensional approach | — | |
| 13299 | Sensory analysis—Methodology—General guidance for establishing a sensory profile | — | |

The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

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# INTRODUCTION

It is necessary to prevent materials intended for the packaging of foodstuffs from being the cause of unwanted alterations in odour or flavour. Likewise, it is necessary to take into account the storage conditions of the foodstuffs once they are packed since this can also be one of the causes of modifications to odour or flavour.

Certain types of foodstuff are particularly susceptible to flavour modifications due to packaging materials (e.g. fatty or powdered products having a large area in contact with the packaging). In particular, the packaging material can contaminate the product by transfer. This transfer can occur by direct contact with the packaging material or, indirectly, by means of the atmosphere created between the packaging and the product. Foreign odours or flavours can also come from the inner or outer layers of the packaging material.

The packaging material can also absorb compounds from foodstuffs and cause modifications of flavours.

Food industries should ensure that the packaging they use is the best possible choice with respect to their products. This is why they must have at their disposal methods which allow them to ascertain that the flavour of the foodstuffs is not significantly modified under certain storage conditions.

Compounds transferred from packaging materials and responsible for undesired effects on the flavour of food products are usually in very low quantities, often below the detection limits of the analytical techniques, or simply the compounds responsible for the changes in flavour have not been identified. Thus, it is necessary to evaluate the sensory properties of packaging materials.

This International Standard describes two complementary tests which are not mutually exclusive:

— assessment of the inherent odour of the packaging material under test (odour test);

— assessment of the change of flavour of a foodstuff after direct or indirect contact with the packaging material under test in actual conditions or in simulated conditions (contact test).

This International Standard was developed by a group composed of sensory analysis experts and experts from the packaging sector and is based on their experience.

NOTES

AUSTRALIAN STANDARD

# Methods for assessing modifications to the flavour of foodstuffs due to packaging

## Method 1:
## Sensory analysis

## 1 Scope

This International Standard describes methods for assessing the changes caused by packaging to the sensory attributes of foodstuffs or their simulants.

The methodology can be used as initial selection to assess a suitable packaging material or as subsequent acceptability screening of individual batches/production run (see Annex A).

This International Standard is applicable to all materials usable for packaging foodstuffs (e.g. paper, cardboard, plastic, foils, wood). Moreover, the scope can be extended to any objects intended to come into contact with foodstuffs (e.g. kitchen utensils, coatings, leaflets, or parts of equipment such as seals or piping) with the aim of controlling food compatibility from a sensory point of view according to the legislation in force.

## 2 Normative references

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

ISO 483:1988, *Plastics — Small enclosures for conditioning and testing using aqueous solutions to maintain relative humidity at constant value*

ISO 4120, *Sensory analysis — Methodology — Triangle test*

ISO 5492, *Sensory analysis — Vocabulary*

ISO 5495:1983, *Sensory analysis — Methodology — Paired comparison test*

ISO 6564, *Sensory analysis — Methodology — Flavour profile methods*

ISO 8586-1, *Sensory analysis — General guidance for the selection, training and monitoring of assessors — Part 1: Selected assessors*

ISO 8586-2, *Sensory analysis — General guidance for the selection, training and monitoring of assessors — Part 2: Experts*

ISO 8587:1988, *Sensory analysis — Methodology — Ranking*

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 multidimensional approach*

ISO 10399, *Sensory analysis — Methodology — Duo-trio test*

ISO 13299, *Sensory analysis — Methodology — General guidance for establishing a sensory profile*