

STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard
for****MATERIALS USED FOR THE PACKAGING OF FOOD AND BEVERAGES —
METHODS FOR THE ASSESSMENT OF ODOUR AND TAIN**

**AS 2609.1
SENSORY METHODS**

PREFACE

This standard was prepared by the Association's Committee on Assessment of Odour from Food Packaging Material under the direction of the Packaging Standards Board.

The recognition of odour or taint is a subjective process occurring within the brain of an individual. Hence, they are not objective qualities, and cannot be assessed without the judgement of a human observer.

Instrumental methods based on gas-liquid chromatography (GLC) and combined GLC and mass spectrometry are available for the identification and estimation of a wide range of compounds in packaging materials. Such techniques are useful in quality control work for monitoring levels of residual solvents, monomers, and plasticizers, but they cannot be used to assess the effect on food flavour of these compounds in the absence of supporting data from sensory tests.

Some of the difficulties confronting the devising of an objective assessment include —

- (a) the changes in nature of taste and odour with concentration of active material;
- (b) the complex variations of strength of taste or odour with concentration of active material;
- (c) the tastelessness of mixtures of materials which as individual compounds have a well-defined flavour when tested individually; or
- (d) the enhancing of the taste or odour of one material by small quantities of another.

It cannot be emphasized too strongly that sensory tests must by definition form the basis of all odour assessment and that objective procedures can take over only when their interpretation has been established by subjective odour or taste assessments.

This standard is intended to provide an authoritative source of important principles and practical guidelines to be used by responsible and competent persons or organizations. It is not to be regarded as being an instruction manual for untrained persons.

Instrumental methods are described in AS 2609.2.*

* In course of preparation.

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FOREWORD

With some packaging materials the intensity of the odour produced varies according to the moisture content of the material and the atmosphere surrounding it. This standard specifies test conditions in which the moisture content is changed by the addition of a quantity of water.

The level of odorous substances in a packaging material that can be tolerated by any particular foodstuff depends on a number of factors including the sensitivity of the foodstuff to the odour involved, the shelf life of the package concerned, the processing conditions to which the packaged product may be subjected and the climatic conditions of marketing which may vary from frozen food temperatures to the ambient conditions in stores and retail outlets. For the purposes of this standard, it is assumed that a full evaluation of the compatibility of the foodstuff with the packaging material concerned has been carried out with satisfactory results and the standard lays down the conditions under which tests should be carried out on subsequent batches.

METHODS

1 SCOPE. This standard sets out the sensory methods to be used for assessing the risk of odour and taint from packaging materials causing complaint in respect of packaged foods and beverages (hereinafter referred to as foodstuffs).

2 APPLICATION. An odour test should be carried out on all batches of material. In cases where the odour level is high, as determined in accordance with this standard, the material shall be rejected and not submitted to a taste test procedure. Where, however, the odour level is low, the material shall be subjected to a taste test procedure.

In order to suit the specific circumstances for the tests described in this standard, the quantities of the packaging material, the test foodstuff employed, the capacity of the jars used and the time and temperature for and at which the test preparations are allowed to stand may be altered from those given in this standard. All deviations from standard procedure must be recorded when reporting test conditions.

NOTES:

1. The presence of odours in any food packaging material is undesirable for two distinct reasons. First of all the odour, if present in sufficient concentration to be detectable immediately a food package is opened, is likely to produce undesirable reactions from the customer, irrespective of whether the odour concerned has tainted the foodstuff or not. In the extreme case an objectionable odour will preclude the customer from tasting the product. Secondly, the odour alone can be at a level insufficiently strong to cause rejection, but of such a nature as to transfer to the foodstuff, and then to appear as a taint during consumption of the prepared foodstuff.

It is important to bear these two possibilities in mind when considering the subsequent clauses of this standard.

2. Whenever possible, taint tests should be carried out on the foodstuff concerned packaged in the package which is to be used for that product. Thus, if it is intended to estimate whether or not any taint will be produced during the shelf life of a packaged product, then the product itself in its intended package should be used in the contamination experiments described, and the examination for taint should be made by the appropriate method.
3. An example of a simplified method of sample preparation for solid samples is described in Appendix D.
4. Where it is found necessary to provide a higher level of discrimination, the methodology described in AS 2542 should be used.

3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1199 Sampling Procedures and Tables for Inspection by Attributes

AS 1399 Guide to AS 1199, Sampling Procedures and Tables for Inspection by Attributes

AS 2400 SAA Packaging Code

Part 1 — Glossary of Packaging Terms

AS 2542 Sensory Analysis of Foods

Part 1 — General Guide to the Methodology*

Part 2 — Specific Methods

Section 1 — Paired Comparison Test

Section 2 — Triangle Test*

* In course of preparation.