

AS 2367—1990

Australian Standard<sup>®</sup>

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**Essential oils—Oil of orange**

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This Australian Standard was prepared by Committee CH/21, Essential Oils. It was approved on behalf of the Council of Standards Australia on 5 April 1990 and published on 17 September 1990.

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Australian Society of Cosmetic Chemists  
Australian Society of Perfumers and Flavourists  
Australian Tea Tree Industry Association  
Cosmetic, Toiletry and Fragrance Association of Australia  
Department of Agriculture and Fisheries, N.S.W.  
Flavour and Perfume Compound Manufacturers Association of Australia  
Producers of essential oils  
Proprietary Association of Australia  
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## PREFACE

This Standard was prepared by the Standards Australia Committee on Essential Oils, under the direction of the Chemical Standards Board, to provide a specification for oil of orange produced from locally grown fruit.

The Standard is based on ISO 3140, *Oil of sweet orange, obtained by expression* however it differs from that Standard in the specified amount of residue on evaporation.

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STANDARDS AUSTRALIA

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**Australian Standard**

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**Essential oils—Oil of orange**

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**1 SCOPE.** This Standard specifies particular characteristics for the oil from Australian-grown oranges, obtained by cold expression from the peel.

**2 REFERENCED DOCUMENTS.** The following documents are referred to in this Standard:

AS

2162 Code of practice for the use of volumetric glassware

ISO

R210 Essential oils—Packing

R211 Essential oils—Labelling and marking containers

212 Essential oils—Sampling

279 Essential oils—Determination of relative density at 20 degrees (Reference method)

280 Essential oils—Determination of refractive index

592 Essential oils—Determination of optical rotation

875 Essential oils—Evaluation of miscibility in ethanol

4715 Essential oils—Quantitative evaluation of residue on evaporation

**3 DEFINITION.** For the purpose of this Standard, the definition below applies.

*Oil of orange*—the oil obtained from the outer part of the fresh pericarp of the ripe or nearly ripe fruit of *Citrus sinensis* (Linne) Osbeck (Fam. Rutaceae) by cold expression.

**4 CHARACTERISTICS.**

**4.1 General description.** A clear, pale orange to deep orange liquid, mobile at 20°C and with the characteristic odour of fresh, crushed, sweet orange peel. The oil may be cloudy at 0°C.

**4.2 Relative density at 20°C/20°C.** When determined in accordance with ISO 279, the ratio of the mass of a given volume of the oil to the mass of an equal volume of distilled water shall be in the following range:

Minimum: 0.840

Maximum: 0.850

**4.3 Refractive index.** When determined in accordance with ISO 280 at a wavelength of  $589.3 \pm 0.3$  nm (corresponding to the D lines of the sodium spectrum), the refractive index of the oil at 20°C shall be in the following range:

Minimum: 1.470

Maximum: 1.478

**4.4 Optical rotation.** When determined in accordance with ISO 592, the optical rotation of the oil at 20°C at a wavelength of  $589.3 \pm 0.3$  nm (corresponding to the D lines of the sodium spectrum) shall be in the range +94° to +99°.

**4.5 Residue on evaporation.** When determined in accordance with ISO 4715, the residue, expressed as percent (m/m), which remains after heating 5.0 g of orange oil for 5 h on a boiling water bath shall be in the following range:

Minimum: 1.5

Maximum: 5.0

**4.6 Miscibility with ethanol.** When tested in accordance with ISO 875, one volume of orange oil shall completely dissolve in one volume of 95% (V/V) ethanol at 20°C.

NOTE: The presence of a slight cloudiness in the resulting solution does not render the oil unacceptable.

**4.7 Aldehyde content (expressed as decanal).** When determined in accordance with Appendix A, the aldehyde content of the oil expressed as percent (m/m) decanal shall be in the following range:

Minimum: 0.9

Maximum: 3.1

**5 SAMPLING.** Sampling procedures shall be in accordance with ISO 212.