

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 856

OIL OF PEPPERMINT

FRANCE, ITALY, UNITED KINGDOM AND U.S.A.

1st EDITION
October 1968

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BRIEF HISTORY

The ISO Recommendation R 856, *Oil of peppermint – France, Italy, United Kingdom and U.S.A.*, was drawn up by Technical Committee ISO/TC 54, *Essential oils*, the Secretariat of which is held by the Repartição de Normalização (IGPAI).

Work on this question led, in 1966, to the adoption of a Draft ISO Recommendation.

In October 1967, this Draft ISO Recommendation (No. 1034) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Argentina
Australia
Austria
Belgium
Brazil
Canada
Chile
France

India
Ireland
Israel
Italy
Netherlands
New Zealand
Portugal
Romania

South Africa, Rep. of
Thailand
Turkey
U.A.R.
United Kingdom
Yugoslavia

One Member Body opposed the approval of the Draft :

Germany

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in October 1968, to accept it as an ISO RECOMMENDATION.

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OIL OF PEPPERMINT

FRANCE, ITALY, UNITED KINGDOM AND U.S.A.

1. SCOPE

This ISO Recommendation specifies certain characteristics of oil of peppermint from France, from Italy, from the United Kingdom and from the U.S.A., with a view to facilitating the appreciation of its quality.

2. DEFINITION

By "oil of peppermint, France, Italy, United Kingdom and U.S.A." is meant the oil obtained by steam distillation of the flowering herb *Mentha piperita* (Linnaeus) var-*piperita*, growing in France, Italy, the United Kingdom and the U.S.A.

3. REQUIREMENTS

Requirements \ Origin	France	Italy	United Kingdom	U.S.A.
Appearance	Clear, mobile liquid			
Colour	Almost colourless to pale greenish-yellow			
Odour	Characteristic of <i>Mentha piperita</i>			
Relative density at 20/20 °C	min. 0.901 max. 0.916	0.900 0.910	0.900 0.913	0.903 0.912
Refractive index at 20 °C	min. 1.460 max. 1.467	1.462 1.464	1.460 1.465	1.460 1.464
Optical rotation at 20 °C	Range from -29 to -10°	Range from -23 to -16°	Range from -30 to -20°	Range from -28 to -17°
Solubility in 70 % (v/v) ethanol at 20 °C	In 5.0 volumes	In 3.5 volumes	In 4.0 volumes	In 5.0 volumes
	sometimes with opalescence			
Ester value	min. 14 max. 19	14 34	11 26	14 29
Ester value after acetylation	min. 135 max. 200	135 174	165 226	157 193
Content of carbonyl compounds (%) (expressed as menthone)	min. 15 max. 30	19 30	15 32	19 32

4. SAMPLING

See ISO Recommendation R 212, *Essential oils – Sampling*.

Minimum volume of final sample : 50 cm³.

5. METHODS OF TEST

5.1 Relative density at 20/20 °C

See ISO Recommendation R 279, *Determination of the density and relative density of essential oils*.

5.2 Refractive index at 20 °C

See ISO Recommendation R 280, *Determination of the refractive index of essential oils*.

5.3 Optical rotation at 20 °C

See ISO Recommendation R 592, *Determination of the optical rotation of essential oils*.

5.4 Solubility in 70 % (v/v) ethanol at 20 °C

See ISO Recommendation R 875, *Determination of solubility of essential oils in ethanol*.

5.5 Ester value

5.5.1 See ISO Recommendation R 709, *Determination of ester value and calculation of ester content of essential oils*.

Saponification time : 1 hour.

5.5.2 The ester content is expressed as menthyl acetate ($M = 198.3$).

5.5.3 The esterified alcohol content, expressed as menthol ($M = 156.2$), is given by the following formula :

$$\text{percentage menthol} = \frac{156.2 \times EV}{561}$$

where EV is the ester value found (see clause 5.5.1).

5.6 Ester value after acetylation

5.6.1 See ISO Recommendation R . . . ,* *Estimation of free alcohol content of essential oils by determination of the ester value after acetylation*.

Use 15 cm³ of acetic anhydride.

Saponification time : 1 hour.

5.6.2 The free alcohol content, expressed as menthol, is given by the formula indicated in clause 8.1 of the ISO Recommendation mentioned in clause 5.6.1, where $M = 156.2$.

5.6.3 The total alcohol content, expressed as menthol, is given by adding the percentage figures obtained as indicated in clauses 5.5.3 and 5.6.2.

* At present Draft ISO Recommendation No. 1241.