
International Standard



856

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Oil of peppermint, France, Italy, United Kingdom and USA

Huile essentielle de menthe poivrée, France, Italie, Royaume-Uni et USA

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Descriptors : essential oils, spearmint, materials specifications, France, Italy, United Kingdom, United States of America.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 856 was developed by Technical Committee ISO/TC 54, *Essential oils*, and was circulated to the member bodies in February 1980.

It has been approved by the member bodies of the following countries :

Australia	France	Philippines
Austria	India	Portugal
Bulgaria	Italy	South Africa, Rep. of
Chile	Korea, Rep. of	USSR
Egypt, Arab Rep. of	Netherlands	

No member body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 856-1968, of which it constitutes a technical revision.

Oil of peppermint, France, Italy, United Kingdom and USA

1 Scope and field of application

This International Standard specifies certain characteristics of oil of peppermint, France, Italy, United Kingdom and USA, with a view to facilitating the assessment of its quality.

2 References

- ISO/R 210, *Essential oils — Packing*.
- ISO/R 211, *Essential oils — Labelling and marking containers*.
- ISO 212, *Essential oils — Sampling*.
- ISO 279, *Essential oils — Determination of relative density at 20 °C (Reference method)*.
- ISO 280, *Essential oils — Determination of refractive index*.

ISO 592, *Essential oils — Determination of optical rotation*.

ISO 709, *Essential oils — Determination of ester value*.

ISO 875, *Essential oils — Evaluation of miscibility in ethanol*.

ISO 1241, *Essential oils — Determination of ester value after acetylation and evaluation of free alcohols and total alcohols content*.

ISO 1271, *Essential oils — Determination of carbonyl compounds content — Free hydroxylamine method*.

3 Definition

oil of peppermint, France, Italy, United Kingdom and USA : The product obtained by steam distillation of extremities of the herb *Menta × piperita* Linnaeus var. *piperita*, growing in France, Italy, the United Kingdom and the USA.

4 Requirements

	France	Italy	United Kingdom	USA
4.1 Appearance	Clear, mobile liquid.			
4.2 Colour	Almost colourless to pale greenish-yellow.			
4.3 Odour	Characteristic of the respective origin.			
4.4 Relative density at 20/20 °C				
Minimum . . .	0,901	0,900	0,900	0,903
Maximum . . .	0,916	0,910	0,913	0,912
4.5 Refractive index at 20 °C				
Minimum . . .	1,460 0	1,462 0	1,460 0	1,460 0
Maximum . . .	1,467 0	1,464 0	1,465 0	1,464 0
4.6 Optical rotation at 20 °C				
Minimum . . .	- 29°	- 23°	- 30°	- 28°
Maximum . . .	- 10°	- 16°	- 20°	- 17°
4.7 Miscibility with 70 % (V/V) ethanol at 20 °C	<p>The miscibility with 70 % (V/V) ethanol at 20 °C shall be 1 volume in 5 volumes to give a clear solution.</p> <p>Opalescence may sometimes be observed on further addition of solvent.</p>	<p>The miscibility with 70 % (V/V) ethanol at 20 °C shall be 1 volume in 3,5 volumes to give a clear solution.</p> <p>Opalescence may sometimes be observed on further addition of solvent.</p>	<p>The miscibility with 70 % (V/V) ethanol at 20 °C shall be 1 volume in 4 volumes to give a clear solution.</p> <p>Opalescence may sometimes be observed on further addition of solvent.</p>	<p>The miscibility with 70 % (V/V) ethanol at 20 °C shall be 1 volume in 5 volumes to give a clear solution.</p> <p>Opalescence may sometimes be observed on further addition of solvent.</p>
4.8 Ester value				
Minimum . . .	14	14	11	14
Maximum . . .	19	34	26	19

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	France	Italy	United Kingdom	USA
4.9 Ester value after acetylation				
Minimum . . .	135	135	165	157
Maximum . . .	200	174	226	193

4.10 Carbonyl value

	France	Italy	United Kingdom	USA
Minimum . . .	54	68	54	68
Maximum . . .	108	108	115	115

5 Sampling

See ISO 212.

Minimum volume of final sample : 50 ml

6 Methods of test

6.1 Relative density at 20/20 °C

See ISO 279.

6.2 Refractive index at 20 °C

See ISO 280.

6.3 Miscibility with 70 % (V/V) ethanol at 20 °C

See ISO 875.

6.4 Ester value

See ISO 709.

Test portion : 5 g

Saponification time : 1 h

6.5 Ester value after acetylation

See ISO 1241.

Saponification time : 1 h

6.6 Carbonyl value

See ISO 1271.

Test portion : 2 g

Standing time : 1 h

Calculate the carbonyl value, expressed in milligrams of KOH per gram of oil, by the formula

$$\frac{C}{100} \times \frac{56,1}{M_r} \times 1\,000 = \frac{561 C}{M_r}$$

where

C is the percentage of carbonyl compounds, expressed as menthone;

M_r is the relative molecular mass of menthone (154,2).

Express the carbonyl value to the nearest whole number.

7 Packing, labelling and marking

See ISO/R 210 and ISO/R 211.

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