

TECHNICAL REPORT

**ISO/TR
11018**

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Essential oils — General guidance on the determination of flashpoint

*Huiles essentielles — Directives générales pour la détermination du point
d'éclair*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/TR 11018, which is a Technical Report of type 3, was prepared by Technical Committee ISO/TC 54, *Essential oils*.

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INTRODUCTION

Carriers, insurance companies, stock managers, etc. need to know the flashpoint of combustible essential oils to provide the necessary conditions for meeting safety requirements for storage and transport.

It was therefore decided to add information on the flashpoint to each International Standard on the specifications of essential oils and to attempt to standardize a suitable test method for its determination.

A comparative study of the methods described in International Standards and other technical documents in similar fields such as paints, varnishes, petroleum and related products was then carried out (see annex A).

This study produced the conclusion that it was difficult to adopt a single method which could be applied to all essential oils, for the following reasons:

- there are a large number of essential oils and their chemical composition varies greatly;
- the recommended volume of sample for the use of certain apparatus (30 ml to 150 ml) is incompatible with the high price of certain essential oils;
- users cannot be forced to buy one type of equipment rather than another when there are several types in existence which respond perfectly well to the intended objectives;
- there exist already many references giving the flashpoint of certain essential oils with various types of apparatus.

In conclusion, it was felt to be impossible to standardize a single method, and it was therefore decided:

- simply to supply a guide for the user enabling selection of the most appropriate apparatus and method for the case under study;
- to add an annex to all essential oil standards to give the mean flashpoint for information, stating wherever possible the determination method.

Essential oils – General guidance on the determination of flashpoint

1 SCOPE

This Technical Report provides a list of methods that can be used for the determination of flashpoint, together with information on their respective fields of application.

It is intended for use by test laboratories and organizations responsible for monitoring all safety conditions during the transport and/or storage of essential oils.

2 REFERENCES

NOTE – This list is not exhaustive.

International standards

- | | |
|---------------|---|
| ISO 1516:1981 | Paints, varnishes, petroleum and related products - Flash/no flash test - Closed cup equilibrium method |
| ISO 1523:1983 | Paints, varnishes, petroleum and related products - Determination of flashpoint - Closed cup equilibrium method (not equivalent to NF T 30-050) |
| ISO 2719:1988 | Petroleum products and lubricants - Determination of flashpoint - Pensky-Martens closed cup method |
| ISO 3679:1983 | Paints, varnishes, petroleum and related products - Determination of flashpoint- Rapid equilibrium method |
| ISO 3680:1983 | Paints, varnishes, petroleum and related products - Flash/no flash test - Rapid equilibrium method |

European standard

- | | |
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| EN 57:1984 | Petroleum products - Determination of flashpoint - Abel-Pensky closed tester |
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