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ISO Internat Doc Sect

Essential oils — Analysis by high performance liquid chromatography — General method

Huiles essentielles — Analyse par chromatographie liquide sous pression — Méthode générale

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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8432 was prepared by Technical Committee ISO/TC 54, *Essential oils*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Essential oils — Analysis by high performance liquid chromatography — General method

1 Scope and field of application

This International Standard specifies a general method for the analysis of essential oils by high performance liquid chromatography for the purpose of determining the content of a specific compound and/or searching for a characteristic profile.

2 Reference

ISO 356, *Essential oils — Preparation of test sample*.

3 Principle

Liquid chromatography is a method of separation based on the phenomena of adsorption, partition, ion exchange and/or exclusion. It enables a small quantity of aromatic essential oil or other raw materials for the perfume industry to be analysed on a chromatographic column with an appropriate packing and under appropriate conditions, the possible identification of the different constituents and the quantitative determination of specific compounds by measuring the area or height of their peaks.

4 Reagents and materials

4.1 Reference substance, corresponding to the compound to be determined or detected. The reference substance will be indicated in each relevant International Standard. The reference substance shall have been recently purified.

4.2 Internal standard or external standard.

The internal standard or external standard will be specified in each relevant International Standard; it shall elute as closely as possible to the compound to be determined and its peak shall not superpose on that of any compound in the essential oil which is detectable by the detection system used.

4.3 Mobile phase.

The composition of the mobile phase may remain constant during operation (isocratic elution) or change according to a

specified programme (gradient of elution). It will be specified in each relevant International Standard.

4.4 Elution solvent.

The nature and quality of solvents will be chosen according to the sample to be analysed and according to the nature of the column and detector used. The solutions shall be free from solid particles smaller than 0,5 μm .

4.5 Gas.

If the pumping system requires the use of a gas, it shall be inert. Helium, nitrogen or argon may be used.

5 Apparatus

5.1 Separation system.

5.1.1 Chromatograph.

5.1.2 Pumping system or any other system, which enables a constant or programmed flow rate to be obtained and maintained.

5.1.3 Solvent supply system.

5.1.4 Solvent degassing system.

5.1.5 Suitable detector system, which enables the quantities of compounds present in the sample to be determined.

5.2 Recorder, and (optional) **integrator**, whose performance is compatible with the rest of the apparatus.

5.3 Column, made of an inert material (for example glass, stainless steel) having mechanical properties which enable the pressure to be withstood.

The nature and the particle size of the stationary phase will be specified in each relevant International Standard.

The temperature of the column may be stabilized or programmed.