INTERNATIONAL STANDARD

ISO 22590

First edition
2020-11

Traditional Chinese medicine — Determination of sulfur dioxide in natural products by titration

Médecine traditionnelle chinoise — Dosage du dioxyde de soufre dans les produits naturels par titrage

Reference number
ISO 22590:2020(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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 procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 249, *Traditional Chinese medicine*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Traditional Chinese medicine — Determination of sulfur dioxide in natural products by titration

1 Scope

This document specifies the determination method of sulfur dioxide in natural products used in traditional Chinese medicine, which includes the requirements of the device, chemicals, operational procedures and formula.

It is applicable to natural products of traditional Chinese medicine, including Chinese materia medica (whole medicinal materials) and decoction pieces derived from plants or animals.

It is not applicable to minerals used in traditional Chinese medicine.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
sulfur dioxide
toxic gas with a pungent, irritating odour, the chemical compound with the formula SO_2

3.2
sulfur dioxide residue
sulfur dioxide that remains in or on a natural product

Note 1 to entry: Sulfur dioxide residue is expressed as mg/kg.

3.3
maximum residue limit
MRL
highest level of sulfur dioxide that is permitted in or on a natural product

Note 1 to entry: Maximum residue limit is expressed as mg/kg.

3.4
acceptable daily intake
ADI
estimate of the amount of sulfur dioxide in natural products that can be safely consumed daily over a lifetime without adverse health effects

Note 1 to entry: ADI is expressed in milligrams of the sulfur dioxide, as it appears in the natural products, per kilograms of body mass per day (mg/kg/day).

3.5
acid-base titration
determination of the concentration of an acid or base by exactly neutralizing the acid or base with a base or acid of known concentration

4 Apparatus

4.1 Glass sample, cleaned thoroughly before use.

4.2 Electronic balance, with a minimum reading of 0,1 mg.

4.3 Separatory funnel, with a capacity of 50 ml or 100 ml.

4.4 Round-bottom flask, with a capacity of 500 ml or 1 000 ml.

5 Reagents

All reagents shall be of recognized chromatographic grade or analytical purity. Distilled water or water of equivalent purity or above, recently boiled, shall be used.

5.1 Distilled water.

5.2 Bromophenol blue, 1 g/l solution of bromophenol blue in ethanol (20 % volume fraction).

5.3 Hydrochloric acid, 6 mol/l solution of diluted hydrochloric acid. Dilute one volume of concentrated hydrochloric acid.

5.4 Hydrogen peroxide, 3 % volume fraction solution of diluted hydrogen peroxide, free from sulfate ions.

5.5 Sodium hydroxide, 0,1 mol/l solution of sodium hydroxide (standard volumetric solution).

6 Sampling and preservation of samples

6.1 Sampling

6.1.1 Laboratory samples

Raw material samples received by the laboratory shall be accompanied with complete information such as the source and time of collection of the samples. The samples for testing can include Chinese materia medica (whole medicinal materials) and decoction pieces derived from plants or animals.

6.1.2 Sample identification

When a sample is received, it shall be immediately assigned a unique label which will accompany it through all stages of the analysis to the reporting of the results. Samples shall be subject to the appropriate disposal review system and all records shall be accurately kept.