
International Standard



2172

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Fruit juice — Determination of soluble solids content — Pyknometric method

Jus de fruits — Détermination du résidu sec soluble — Méthode pycnométrique

First edition — 1983-08-01

Sample Document

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UDC 663.81 : 543.83

Ref. No. ISO 2172-1983 (E)

Descriptors : agricultural products, fruit and vegetable products, fruits, fruit juices, tests, determination of content, soluble matter, solids, pyknometric analysis.

Price based on 3 pages

ISO 2172:1983 • <https://standards.iteh.ai/catalog/standards/iso/707ad578-254b-4158-a753-c60c42f7e1db/iso-2172-1983>

Foreword

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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 2172 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in April 1982.

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

Australia	Iran	Portugal
Brazil	Iraq	Romania
Canada	Ireland	South Africa, Rep. of
Czechoslovakia	Israel	Tanzania
Egypt, Arab Rep. of	Jamaica	Thailand
Ethiopia	Korea, Rep. of	Turkey
France	Malaysia	USA
Germany, F.R.	New Zealand	USSR
Hungary	Peru	Yugoslavia
India	Poland	

No member body expressed disapproval of the document.

Fruit juice — Determination of soluble solids content — Pyknometric method

1 Scope and field of application

This International Standard specifies a pyknometric method for the determination of the soluble solids content of fruit juice.

The method is applicable to fruit juice containing no suspended matter and to clear concentrated juice. It is not applicable to other fruit and vegetable products, for which the method specified in ISO 2173 should be used.

2 Reference

ISO 2173, *Fruit and vegetable products — Determination of soluble solids content — Refractometric method*.

3 Definition

soluble solids content of a juice (determined by the pyknometric method): The sucrose concentration of an aqueous solution having the same relative density as the juice analysed, under specified conditions of preparation and temperature.

This concentration is expressed in grams per 100 g. The soluble solids content of fruit juice may also be expressed in grams per 100 ml.

4 Principle

Measurement of the relative density of a test portion at 20 °C using a pyknometer, and conversion, using a table, of the relative density into the soluble solids content expressed as sucrose.

5 Apparatus

Usual laboratory equipment, and

5.1 Pyknometer, of capacity 50 ml.

5.2 Pyknometer funnel.

5.3 Water bath, capable of being controlled at $20 \pm 0,2$ °C.

5.4 Calibrated thermometer, graduated in 0,2 °C or 0,1 °C divisions over the range from 10 to 30 °C.

5.5 Analytical balance.

6 Procedure

6.1 Preparation of the test sample

6.1.1 Fruit juice

Thoroughly mix the laboratory sample.

In cases where the juice contains considerable quantities of carbon dioxide, remove as much as possible by shaking 250 ml of the juice in a 1 000 ml flask, or by filtration over 2 g of cotton wool placed in a Buchner funnel.

6.1.2 Concentrated juice

Thoroughly mix the laboratory sample and dilute the juice as follows.

Weigh, to the nearest 0,001 g, in a 100 ml one-mark volumetric flask, a quantity of the laboratory sample such that the soluble solids content of the final solution is about 20 to 25 %. Dilute to the mark with distilled water and mix carefully.

NOTE — In some cases, it is useful to dilute to 8 to 10 % soluble solids content.

6.2 Supplementary treatment

6.2.1 If the test sample is turbid, filter it through a folded, rapid filter paper, in a covered funnel, or centrifuge it in stoppered tubes.

6.2.2 If the initial product contains a relatively large quantity of ethanol, it is necessary to remove it from the test sample by the following method. Take exactly 100 ml of the test sample, place in a dry container and heat on a boiling water bath so that the volume of the sample is reduced to one-third. Then transfer the remainder into a 100 ml one-mark volumetric flask, dilute to the mark with rinsing water and shake. This treatment is not necessary in cases where the quantity of ethanol does not exceed 0,5 g per 100 ml of the test solution.