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IRISH STANDARD

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FRUIT AND VEGETABLE JUICES - DETERMINATION OF TOTAL SULFUR DIOXIDE BY DISTILLATION

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EUROPEAN STANDARD

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English version

Fruit and vegetable juices - Determination of total sulfur dioxide by distillation

Jus de fruits et de légumes - Dosage du dioxyde de soufre total par distillation

Frucht- und Gemüsesäfte - Bestimmung des Gesamtschwefeldioxids durch Destillation

This European Standard was approved by CEN on 20 January 2000.

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 174 "Fruit and vegetable juices - Methods of analysis", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2000, and conflicting national standards shall be withdrawn at the latest by September 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Standard specifies a distillation method for the quantitative determination of total sulfur dioxide in fruit or vegetable juices and related products.

This method applied to onions, leek or cabbage products can lead to false positive results.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN ISO 3696:1995, *Water for analytical laboratory use - Specification and test method (ISO 3696:1987).*

3 Symbols

For the purposes of this standard the following symbols apply :

c Substance concentration;

ρ Mass concentration;

ϕ Volume fraction.

4 Principle

The acidified fruit or vegetable juice to be analysed is heated in a distillation system. The sulfur dioxide liberated is swept out of the system with nitrogen or air and is bubbled through a neutralised solution of hydrogen peroxide where it is oxidised to sulfuric acid. The quantification of the sulfur dioxide is then carried out by titration against a standardised sodium hydroxide solution.

5 Reagents

5.1 General

Use only reagents of recognized analytical grade and only water in accordance with at least grade 1 of EN ISO 3696:1995.

5.2 Phosphoric acid, ϕ (H_3PO_4) = 85 %.

5.3 Ethanol, ϕ (CH_3CH_2OH) = 50 %.

5.4 Mixed indicator solution

Dissolve 100 mg of methyl red and 50 mg of methylene blue in approximately 50 ml of ethanol (see 5.3) with stirring. After the indicators have dissolved make the solution up to 100 ml with ethanol.

5.5 Hydrogen peroxide solution, ϕ (H_2O_2) = 30 %.

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