

Foodstuffs — Determination of cyclamate — High performance liquid chromatographic method

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ICS 67.040

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 13 and a back cover.

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Foodstuffs — Determination of cyclamate — High performance liquid chromatographic method

Produits alimentaires — Dosage du cyclamate —
Méthode par chromatographie liquide haute
performance

Lebensmittel — Bestimmung von Cyclamat —
Hochleistungs flüssigchromatographisches Verfahren

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 275, Food analysis — Horizontal methods, the Secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by October 1999, and conflicting national standards shall be withdrawn at the latest by October 1999.

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.

1 Scope

This European Standard specifies a high performance liquid chromatographic (HPLC) method for the determination of sodium cyclamate in foodstuffs [1], [2], [3]. The method has been validated in an inter-laboratory test according to ISO 5725:1986 [4] which has been carried out with lemonade, orange juice beverage, fruit yogurt and spray cream.

In addition to the matrices investigated in the inter-laboratory test, experiences have shown that the method is also applicable to various foodstuffs such as gherkins, canned morello cherries, pineapple, orange nectar, apricot jam, blackberry jam, cherry nectar, hard candy, mixed fruit yogurt, strawberry yogurt, fruit quark, rice-pudding-apple-raisins, chocolate custard powder, cream dessert vanilla powder, vanilla ice and passion fruit-orange ice cream [2], [3].

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 draft 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, *Water for analytical laboratory use — Specification and test methods*. (ISO 3696:1987)

3 Principle

Sodium cyclamate is extracted from the sample with water, converted to N,N-dichlorocyclohexylamine and determined by HPLC on a reversed-phase column using UV detection at a wavelength of 314 nm.

4 Reagents

During the analysis, unless otherwise stated, use only reagents of recognized analytical grade and water of at least grade 1 as defined in EN ISO 3696. When preparing solutions, the purity of the substances shall be taken into account.

4.1 *Methanol*, for HPLC.

4.2 *n-Heptane*, for HPLC.

4.3 *Light petroleum*, having a boiling range from 40 °C to 60 °C.

4.4 *Sodium sulfate*, anhydrous. If necessary, wash with *n*-heptane to remove lipophilic contaminants.

4.5 *Sodium carbonate solution*, r (Na_2CO_3) = 50 g/l¹⁾.

4.6 *Sodium hypochlorite solution* (1,7 % active chlorine)

Dilute commercially available sodium hypochlorite solution containing more than 1,7 % active chlorine with water to get a mass fraction of 1,7 % of active chlorine. Check the content of active chlorine of the sodium hypochlorite solution regularly, e.g. using the procedure as described in annex A.

4.7 *Sulfuric acid*, $w(\text{H}_2\text{SO}_4)$ = 50 %²⁾

¹⁾ r is the mass concentration.

²⁾ w is the mass fraction.