Irish Standard
I.S. EN 17246:2019

Fertilizers - Determination of perchlorate in mineral fertilizers by ion chromatography and conductivity detection (IC-CD)

I.S. EN 17246:2019

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 17246:2019 is the adopted Irish version of the European Document EN 17246:2019, Fertilizers - Determination of perchlorate in mineral fertilizers by ion chromatography and conductivity detection (IC-CD)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17246

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English Version

Fertilizers - Determination of perchlorate in mineral fertilizers by ion chromatography and conductivity detection (IC-CD)

Engrais - Détermination du perchlorate dans les engrais minéraux par chromatographie ionique et détection conductimétrique (IC-CD)

Düngemittel - Bestimmung von Perchlorat in mineralischen Düngemitteln mit Ionenchromatographie und Leitfähigkeitsnachweis (IC-CD)

This European Standard was approved by CEN on 7 July 2019.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 17246:2019) has been prepared by Technical Committee CEN/TC 260 “Fertilizers and liming materials”, 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of an identical text or by endorsement, at the latest by February 2020, and conflicting national standards shall be withdrawn at the latest by February 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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1 Scope

This document specifies a method for the determination of traces of perchlorate in mineral fertilizers by ion chromatography and conductivity detection (IC-CD).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12944-1, *Fertilizers and liming materials and soil improvers — Vocabulary — Part 1: General terms*

EN 12944-2, *Fertilizers and liming materials and soil improvers — Vocabulary — Part 2: Terms relating to fertilizers*

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12944-1 and EN 12944-2 apply.

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

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 Principle

The perchlorate content of the fertilizer sample is determined by ion chromatography with conductivity detection after extraction in water. The ion chromatograph comprises a sample injection part, a separation part and detection part. For lower noise and background level of detection, a suppressed conductivity detector may be used. Anion exchange resin is used as stationary phase and aqueous solutions of monobasic and dibasic salts are used as mobile phase.

5 Reagents

All reagents shall be of recognized analytical grade and shall have negligible concentration of the element to be determined if compared to the lowest concentration of that element in the sample solution.

5.1 Water, grade 1 according to EN ISO 3696.

5.2 Perchlorate standard solutions, with a mass concentration of $\rho(ClO_4^-)$ = 0,05 mg/l, 0,1 mg/l, 0,3 mg/l, 0,5 mg/l, 0,7 mg/l and 1 mg/l, prepared from a stock solution with verified concentration of perchlorate, e.g. with $\rho(ClO_4^-)$ = 1 000 mg/l.

The 0,5 mg/l calibration standard is used for a regular calibration testing.

5.3 Quality control sample, with a mass concentration of $\rho(ClO_4^-)$ = 0,5 mg/l prepared from a solution (e.g. $\rho(ClO_4^-)$ = 1 000 mg/l of perchlorate standard).