

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15561

August 2023

ICS 65.080

Supersedes EN 15561:2009

English Version

**Inorganic fertilizers - Determination of total nitrogen in
calcium cyanamide containing nitrates**

Engrais inorganiques - Dosage de l'azote total dans la
cyanamide calcique nitraté

Anorganische Düngemittel - Bestimmung des
Gesamtstickstoffs in nitrathaltigem Kalkstickstoff

This European Standard was approved by CEN on 26 June 2023.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 15561:2023) 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of an identical text or by endorsement, at the latest by February 2024, and conflicting national standards shall be withdrawn at the latest by February 2024.

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.

This document supersedes EN 15561:2009.

In comparison with the previous edition EN 15561:2009, the following technical modifications have been made:

- technical change to the preparation of the solution, i.e. deletion of the last paragraph of 8.1;
- deletion of former tables and addition of a technically revised Table (8.2);
- deletion of distillation apparatus drawings;
- rewording the Expression of result (Clause 9).

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

EN 15561:2023 (E)**1 Scope**

This document specifies a method for the determination of total nitrogen in calcium cyanamide. The method is applicable to calcium cyanamide containing nitrates.

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 1482-2, *Fertilizers and liming materials — Sampling and sample preparation — Part 2: Sample preparation*

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

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

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 terminology databases for use in standardization at the following addresses:

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

4 Principle

Reduction of nitrate nitrogen to ammonia with metallic iron and stannous chloride solution. Digestion in sulfuric acid. Distillation of the ammonia from an alkaline solution, absorption in an excess of sulfuric acid volumetric solution and back-titration with sodium or potassium hydroxide volumetric solution.

5 Reagents

Use only reagents of recognized analytical grade and water with an electrical conductivity < 0,5 mS/m (at 25 °C)

5.1 Sulfuric acid, mass concentration $\rho_{20} = 1,84$ g/ml

5.2 Powdered iron, reduced in hydrogen

5.3 Potassium sulphate, analytical grade

5.4 Sulfuric acid substance concentration $c = 0,05$ mol/l

5.5 Sodium or potassium hydroxide, substance concentration, $c = 0,1$ mol/l, carbonate free

5.6 Sulfuric acid, $c = 0,1$ mol/l

5.7 Sodium or potassium hydroxide, $c = 0,2$ mol/l, carbonate free

5.8 Sulfuric acid, $c = 0,25$ mol/l

5.9 Sodium or potassium hydroxide, $c = 0,5$ mol/l, carbonate free