SLOVENSKI STANDARD
oSIST prEN 15478:2026

01-april-2026

Anorganska gnojila - Določanje celotnega dušika v sečnini, metilenurei in urea formaldehidu

Inorganic fertilizers - Determination of total nitrogen in urea, methylene-urea and urea formaldehyde

Anorganische Düngemittel - Bestimmung des Gesamtgehalts an Stickstoff in Methylen-Harnstoff und Harnstoff-Formaldehyd

Engrais inorganiques - Dosage de l'azote total dans l'urée, le méthylène-urée et l'urée-formaldéhyde

Ta slovenski standard je istoveten z: **prEN 15478**

ICS:

65.080	Gnojila	Fertilizers

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EUROPEAN STANDARD

NORME EUROPÉENNE

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prEN 15478

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ICS 65.080

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English Version

Inorganic fertilizers - Determination of total nitrogen in urea, methylene-urea and urea formaldehyde

Engrais inorganiques - Dosage de l'azote total dans l'urée, le méthylène-urée et l'urée-formaldéhyde

Anorganische Düngemittel - Bestimmung des Gesamtgehalts an Stickstoff in Methylen-Harnstoff und Harnstoff-Formaldehyd

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 260.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 15478:2026) has been prepared by Technical Committee CEN/TC 260 “Fertilizers and liming materials”, the secretariat of which is held by DIN.

This is currently submitted to CEN Enquiry.

This document will supersede EN 15478:2009.

prEN 15478:2026 includes the following significant technical changes with respect to EN 15478:2009:

— The scope has been broadened by adding the determination of the content of total nitrogen in methylene-urea and urea formaldehyde and the title has been adjusted accordingly;

— The method has been technically revised according to the broader scope;

— The statistical results relating to the inter-laboratory study of the determination of total nitrogen in methylene urea and urea formaldehyde have been added (10.2 and Annex B).

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.

1 Scope

This document specifies a method for the determination of the content of total nitrogen in urea, methylene-urea and urea formaldehyde in their pure form in inorganic fertilizers.

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, liming materials and inhibitors — Sampling and sample preparation — Part 2: General sample preparation provisions*

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

EN 12944-2,[2] *Fertilizers, liming materials and inhibitors — 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:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

The nitrogen is transformed quantitatively into ammoniacal salt by boiling in the presence of sulfuric acid. The ammoniacal solution thus obtained is distilled through an alkaline medium, the distillate being collected in an excess of standard sulfuric acid. The excess acid is titrated by means of a standard alkaline solution.

5 Reagents

Use only reagents of recognized analytical grade and distilled or demineralized water, free from carbon dioxide and all nitrogenous compounds, having an electrical conductivity of at least < 0,5 mS/m (at 25 °C).

5.1 Kjeldahl tablets.

5.1.1 5 g/tablet containing 100 parts K_2SO_4 to 1 part selenium.

or, in alternative,

5.1.2 5 g of pure K_2SO_4 in powder (recommended).

5.2 Sulfuric acid, concentrated (mass concentration ρ_{20} = 1,84 g/ml).

[1] A revision is under preparation. Stage at the time of preparation: prEN 12944-1:2026
[2] A revision is under preparation. Stage at the time of preparation: prEN 12944-2:2026

5.3 Sodium hydroxide solution, NaOH, mass fraction of 30 %.

5.4 Sulfuric acid standard solution, amount-of-substance concentration c = 0,05 mol/l (0,10 N/l), to use for the blank test in the determination of total nitrogen in urea only.

5.5 Sulfuric acid standard solution, c = 0,25 mol/l (0,5 N/l).

5.6 Sulfuric acid standard solution, c = 0,5 mol/l (1,0 N/l).

5.7 Sodium or potassium hydroxide standard solution, carbonate free, c = 0,1 mol/l, to use for the blank test in the determination of total nitrogen in urea only.

5.8 Sodium or potassium hydroxide standard solution, carbonate free, c = 0,5 mol/l.

5.9 Sodium or potassium hydroxide standard solution, carbonate free, c = 1,0 mol/l.

5.10 Indicator for ammonia nitrogen, ready for use.

5.11 Anti-bump granules, for example pumice stone, washed in hydrochloric acid and calcined.

5.12 Urea, analytical grade.

5.13 Melamine, analytical grade.

6 Apparatus

6.1 Distillation apparatus, consisting of a round-bottomed flask of suitable capacity connected to a condenser by means of a splash head.

The equipment is made of borosilicate glass.

NOTE The different types of equipment recommended for this determination are reproduced showing all the features of construction in Figures 1, 2, 3, and 4.

Automatic distillation and titration apparatus may be used as well provided that the results are statistically equivalent.