

ICS 65.080

English Version

Fertilizers - Determination of different forms of nitrogen in fertilizers containing nitrogen only as nitric, ammoniacal and urea nitrogen by two different methods

Engrais - Détermination des teneurs des différentes formes d'azote en présence les unes des autres dans les engrais ne contenant l'azote que sous forme nitrique, ammoniacale et uréique en utilisant deux méthodes différentes

Düngemittel - Bestimmung von Gesamtstickstoff in Düngemitteln mit Stickstoff in Form von Ammonium, Nitrat und Harnstoff unter Anwendung von zwei verschiedenen Verfahren

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (CEN/TS 15750:2008) has been prepared by Technical Committee CEN/TC 260 "Fertilizers and liming materials", the secretariat of which is held by DIN.

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1 Scope

This document specifies two different methods (Methods A and B) for the determination of the total nitrogen content in fertilizers. Method A specifies the titrimetric method after distillation according to ISO 5315:1984 [2]. Method B specifies a method by reduction of nitrate with iron and tin(II)-chloride.

2 Normative references

The following referenced documents are indispensable for the application 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 12944-1:1999, *Fertilizers and liming materials and soil improvers - Vocabulary - Part 1: General terms*

EN 12944-2:1999, *Fertilizers and liming materials and soil improvers - Vocabulary - Part 2: Terms relating to fertilizers*

EN ISO 385:2005, *Laboratory glassware – Burettes (ISO 385:2005)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12944-1:1999 and EN 12944-2:1999 apply.

4 Principle

4.1 Method A – Titrimetric method after distillation according to ISO 5315:1984

Reduction of nitrate to ammonia by chromium powder in acid medium. Conversion of organic and urea nitrogen into ammonium sulfate by digestion with concentrated sulfuric acid in the presence of a catalyst. Distillation of the ammonia from an alkaline solution, absorption in an excess of standard volumetric sulfuric acid solution and back-titration with standard volumetric sodium hydroxide solution in the presence of methyl red or screened methyl red as indicator.

4.2 Method B – Reduction of nitrate with iron and tin(II)-chloride

Reduction of nitrate to ammonia by iron powder and tin chloride in acid medium. Conversion of organic and urea nitrogen into ammonium sulfate by digestion with concentrated sulfuric acid in the presence of a catalyst. Distillation of the ammonia from an alkaline solution, absorption in an excess of standard volumetric sulfuric acid solution and back-titration with standard volumetric sodium hydroxide solution in the presence of an indicator solution.