

ICS 65.080

English Version

Fertilizers - Determination of dicyandiamide - Method using high-performance liquid chromatography (HPLC)

Engrais - Détermination de la teneur en dicyandiamide -
Méthode par chromatographie liquide à haute performance
(HPLC)

Düngemittel - Bestimmung von Dicyandiamid - Verfahren
mit Hochleistungs-Flüssigchromatographie (HPLC)

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Foreword

This Technical Specification (CEN/TS 15360:2006) has been prepared by Technical Committee CEN/TC 260 "Fertilizers and liming materials", the secretariat of which is held by DIN.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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1 Scope

This Technical Specification specifies a method for the selective determination of dicyandiamide (DCD) in addition to all the other forms of nitrogen fixations, particularly in fertilizers to which DCD has been added as a nitrification inhibiting agent.

2 Normative references

The following referenced documents are indispensable for the application of this Technical Specification. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

3 Principle

The sample is dissolved or suspended in water, using an ultrasonic bath. To the filtered solution, methyl dicyandiamide is added as the internal standard, the solution is transferred onto a C18 reversed-phase column using a bypass injector and then separated. For the detection an UV-detector is used at a wavelength of 220 nm.

4 Reagents

Use only reagents of recognized analytical grade, and water conforming to grade 2 of EN ISO 3696.

4.1 Dicyandiamide standard solution

Weigh 50 mg of dicyandiamide of known purity into a 1 000 ml volumetric flask and dissolve in water, and make up the volume to the mark. Pipette 10 ml of this solution into a 100 ml volumetric flask and, after having added 10 ml of internal standard solution (4.2), make up the volume to the mark with water.

4.2 Internal standard solution

Weigh 50 mg of methyl dicyandiamide of known purity into a 1 000 ml volumetric flask, dissolve in water and make up the volume to the mark.

4.3 Methanol

HPLC-grade purity

5 Apparatus

5.1 Ultrasonic bath

5.2 Membrane filter

0,45 µm, with the usual filtration equipment.