
Calcium ammonium nitrate (CAN) fertilizer — Specification



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Calcium ammonium nitrate (CAN) fertilizer — Specification

1 Scope

This African Standard specifies requirements, sampling and test methods for calcium ammonium nitrate (CAN) fertilizer.

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.

AOAC 955.01, *Neutralizing value for liming materials*

AOAC 2006.03, *Arsenic, cadmium, cobalt, chromium, lead, molybdenum, nickel, and selenium in fertilizers — Microwave digestion and inductively coupled plasma-optical emission spectrometry*

EN 12048, *Solid fertilizers and liming materials — Determination of moisture content — Gravimetric method by drying at 105±2 °C*

ISO 5314, *Fertilizers — Determination of ammoniacal nitrogen content — Titrimetric method after distillation*

ISO 5315, *Fertilizers — Determination of total nitrogen content — Titrimetric method after distillation*

ISO 7409, *Fertilizers — Marking — Presentation and declarations*

ISO 8157, *Fertilizers and soil conditioners — Vocabulary*

ISO 8397, *Solid fertilizers and soil conditioners — Test sieving*

ISO 14820-1, *Fertilizers and liming materials — Sampling and sample preparation — Part 1: Sampling*

ISO 14820-2, *Fertilizers and liming materials — Sampling and sample preparation — Part 2: Sample preparation*

ISO 15604, *Fertilizers — Determination of different forms of nitrogen in the same sample, containing nitrogen as nitric, ammoniacal, urea and cyanamide nitrogen*

ISO 17318, *Fertilizers and soil conditioners — Determination of arsenic, cadmium, chromium, lead and mercury contents*

ISO 20978, *Neutralising value measurement (or determination)*

ISO 25475, *Fertilizers — Determination of ammoniacal nitrogen*

3 Terms and definitions

For the purpose of this standard the terms and definitions in ISO 8157 apply.

4 Requirements

4.1 General description

The fertilizer shall be in pellet or granular form free from lumps, visible foreign matter and shall be free-flowing.

DARS 1483:2018

4.2 Physical requirement

4.2.1 When test sieved in accordance with ISO 8397, not less than 90% of weight of the material shall be of particles in the size range of 1 mm to 4 mm for pellets or 2mm to 5mm for granular form.

4.2.2 Not more than 5% shall be below 1 mm size.

4.3 Chemical requirements

The fertilizer shall consist of homogeneous granules/pellets of ammonium nitrate with limestone filler and shall comply with the requirements when tested with the appropriate method given in the last column of Table 1.

Table 1 — Requirements/limits for calcium ammonium nitrate

| Characteristic | Requirement | Test method |
|--------------------------------------------------------------------------------|-------------|------------------------|
| Nitrogen content (as total N), %m/m, min. | 26.0% | ISO 5315 |
| Neutralizing value as equivalent of CaO (or as % by weight of CaO), %m/m, min. | 9.0% | ISO 20978/ AOAC 955.01 |
| Moisture, %, m/m, max. | 1.0% | EN 12048 |
| Calcium and magnesium, as %calcium carbonate, m/m, min | 18 | ISO 20978/ AOAC 955.01 |
| Ammoniacal nitrogen, per cent by mass of total nitrogen, min | 50 | ISO 5314/ ISO 25475 |
| Nitrate nitrogen, percent by mass of total nitrogen, min | 50 | ISO 15604 |

4.4 Heavy metal contaminants

The presence of heavy metal contaminants shall not exceed the limits stipulated in Table 2.

Table 2 — Heavy metal contaminants

| Parameter | Limits, mg/kg | Test method |
|--------------------|---------------|--------------|
| Arsenic, As, max. | 10.0 | ISO 17318 |
| Cadmium, Cd, max. | 7 | ISO 17318 |
| Mercury, Hg, max. | 0.1 | ISO 17318 |
| Selenium, Se, max. | 1.0 | AOAC 2006.03 |
| Lead, Pb, max. | 30.0 | ISO 17318 |
| Chromium, Cr, max. | 50.0 | ISO 17318 |

5 Sampling

Sampling shall be carried out in accordance with ISO 14820-1.

6 Tests

6.1 Methods of test

Samples of the fertilizer shall be prepared in accordance with ISO 14820-2 and tested in accordance with the methods of test indicated in Table 1 and Table 2.

6.2 Inspection

From the bulk samples obtained from ISO 14820-1, inspect the lot for the characteristics relating to the packing and marking of the product.

7 Compliance

The lot shall be deemed to comply with the standard if after inspection and testing it complies with the requirements of this standard.

8 Packaging and labelling

8.1 Packaging

The fertiliser shall be packed in clean, non-defective and strong containers. The material for which the container is made shall be such as to protect the contents from moisture and also not lead to easy rupture during handling, transportation and storage.

8.2 Labelling

8.2.1 Each container of the fertiliser shall bear a label in indelible marking in accordance with ISO 7409, the Globally Harmonized System (GHS) and with the following particulars:

- a) name of the fertilizer, as "Calcium Ammonium Nitrate (CAN)";
- b) name, address and physical location of the manufacturer/packer/importer;
- c) the nitrogen content of the material as a percentage by mass;
- d) country of origin/manufacture;
- e) date of manufacture and expiry dates;
- f) the content net weight;
- g) batch/lot number;
- h) storage instructions;
- i) handling instructions.

8.2.2 Bulk containers

Where the product is distributed in bulk, the marking information shall accompany the delivery notice to the purchaser.

9 Certificate of analysis

A certificate of analysis stating the minimum percentage levels of plant nutrient elements shall accompany every lot or consignment of the fertilizer.

10 Material safety

Each container must be accompanied by a Material Safety Data Sheet (MSDS) and Technical Data Sheet (TDS).

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