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**Urea phosphate fertilizer — Specification**

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## Urea phosphate fertilizer — Specification

### 1 Scope

This Draft African Standard specifies the requirements, sampling and test methods for urea phosphate 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.

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 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 11047, *Soil quality — Determination of cadmium, chromium, cobalt, copper, lead, manganese, nickel and zinc — Flame and electrothermal atomic absorption spectrometric methods*

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 15958, *Fertilizers — Extraction of water-soluble phosphorus*

ISO 15959, *Fertilizers — Determination of extracted phosphorus*

ISO 10390, *Soil quality — Determination of pH*

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

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions in ISO 8157 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at: <http://www.iso.org/obp>

— IEC Electropedia: available at: <http://www.electropedia.org/>

## 4 Requirements

### 4.1 Description

The fertilizer shall be free flowing, in the form of crystals or granules. It shall be free from any foreign matter.

### 4.2 Physical requirements

When test sieved in accordance with ISO 8397, the fertilizer shall be homogenous and fully soluble in water.

### 4.3 Chemical requirements

The fertilizers shall comply with the compositional limits specified in Table 1 when tested with the methods specified therein.

**Table 1 — Compositional limits for urea phosphate fertilizer**

| S/N  | Characteristic                                       | Requirement | Test method            |
|------|------------------------------------------------------|-------------|------------------------|
| i.   | Total nitrogen, % (m/m), min.                        | 17          | ISO 5315               |
| ii.  | Water soluble phosphates as $P_2O_5$ , % (m/m), min. | 44          | ISO 15958<br>ISO 15959 |
| iii. | Moisture, % (m/m), max.                              | 0.5         | EN 12048               |
| iv.  | pH (10 % solution)                                   | 1-2         | ISO 10390              |

### 4.4 Heavy metal contaminants

The heavy metal contaminants, if present, shall not exceed the limits stipulated in Table 2 when tested with the methods specified therein.

**Table 2 — Heavy metal contaminants limits**

| S/N  | Parameter   | Maximum limit<br>mg/kg | Test method |
|------|-------------|------------------------|-------------|
| i.   | Arsenic, As | 40.0                   | ISO 17318   |
| ii.  | Cadmium, Cd | 45.0                   |             |
| iii. | Mercury, Hg | 0.1                    |             |

|     |              |       |                        |
|-----|--------------|-------|------------------------|
| iv. | Selenium, Se | 1.0   | AOAC 2006.03           |
| v.  | Lead, Pb     | 30.0  | ISO 17318              |
| vi. | Chromium, Cr | 500.0 | ISO 17318<br>ISO 11047 |

## 5 Packaging

The fertilizer shall be packed in clean, non-defective and appropriate containers that will protect it integrity during handling, transportation and storage.

NOTE The product may be also supplied in bulk containers.

## 6 Labelling

In addition to the labelling requirements of ISO 7409, each container of Urea phosphate fertilizer shall be legibly and indelibly labelled in accordance with Globally Harmonized System (GHS) and with the following information:

- a) name and physical address of manufacturer/packer/importer;
- b) name of the fertilizer, namely “Urea Phosphate Fertilizer”;
- c) guaranteed percentages of nutrient element nitrogen and water soluble phosphates;
- d) date of manufacture;
- e) expiry date;
- f) the net weight of the fertilizer in the package;
- g) lot number or batch number;
- h) handling instructions; and
- i) country of origin.

## 6 Sampling

Sampling and sample preparation shall be carried out in accordance with ISO 14820-1 and ISO 14820-2, respectively.

## **Bibliography**

KS 2527:2014, *Urea phosphate fertilizer — Specification*

