
Monoammonium phosphate (MAP) and diammonium phosphate (DAP) fertilizers — Specification



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Introduction

<Text indicating rationale for the development/harmonization of the standard>

Draft African Standard for comments only — Not to be cited as African Standard

Monoammonium phosphate (MAP) and diammonium phosphate (DAP) fertilizers — Specification

1 Scope

This Draft African Standard specifies the requirements, sampling and methods of test for Monoammonium phosphate (MAP) and diammonium phosphate (DAP) fertilizers.

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

EN 12049, *Solid fertilizers and liming materials - Determination of moisture content - Gravimetric method by drying under reduced pressure*

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

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

ISO 6598, *Fertilizers — Determination of phosphorus content — Quinoline phosphomolybdate gravimetric method*

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

ISO 8157, *Fertilizers, soil conditioners and beneficial substances — Vocabulary*

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

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

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*

3 Terms and definitions

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

4 Requirements

4.1 Description

The fertilizer shall be free flowing, granular and free from any foreign matter.

4.2 Physical requirements

When test sieved in accordance with ISO 8397, not less than 90% of the material shall pass through 4 mm sieve and be retained on 1 mm sieve. Not more than 5% shall be below 1 mm size.

4.3 Chemical requirements

The fertilizers shall comply with the compositional limits and test method specified in Table 1.

Table 1 — Compositional limits

Sl. No.	Characteristic	Requirement/limits		Test method
		MAP	DAP	
i)	Total nitrogen, % (m/m), min.	10	18	ISO 5315
ii)	Water soluble phosphates as P ₂ O ₅ , % (m/m), min.	44	41	ISO 15958
iii)	Available phosphates, as P ₂ O ₅ , % (m/m), min.	50	45	ISO 6598
iv)	Moisture, % (m/m), max.	1.5	1.5	EN 12049

4.4 Heavy metal contaminants

The heavy metal contaminants, if present, shall not exceed the limits specified in Table 2.

Table 2 — Heavy metal contaminants limits

Sl. No.	Parameter	Maximum Limits (mg/kg)	Test method
i)	Arsenic, As	40.0	AOAC 2006.03/ ISO 17318
ii)	Cadmium, Cd	45.0	AOAC 2006.03/ ISO 17318
iii)	Mercury, Hg	0.1	ISO 17318
iv)	Selenium, Se	1.0	AOAC 2006.03
v)	Lead, Pb	30.0	AOAC 2006.03/ ISO 17318
vi)	Chromium, Cr	500.0	AOAC 2006.03/ ISO 17318

5 Sampling and sample preparation

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

6 Packaging and labelling

6.1 Packaging

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

NOTE The product may be also supplied in bulk containers

6.2 Labelling

In addition to the labelling requirements of ISO 7409, each container of monoammonium phosphate (MAP) and diammonium phosphate (DAP) fertilizers shall be legibly and indelibly marked in accordance with Globally Harmonized System (GHS) and with the following particulars.

- a) name and physical address of manufacturer/packer/importer;
- b) name of the fertilizer, namely MAP or DAP fertilizer;
- c) guaranteed percentages of nutrient element nitrogen and available phosphates, i.e., N – P₂O₅
- 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;
- i) Country of origin.

Bibliography

Working Group to identify and acknowledge useful literature used in the preparation of this standard.

KS 157:2010, *Monoammonium phosphate (MAP) and diammonium phosphate (DAP) fertilizers — Specification*

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