



DEAS 1162:2023

ICS 65.080

DRAFT EAST AFRICAN STANDARD

Fertilizers – Mono-Ammonium Phosphate and Di-Ammonium Phosphate
(MAP & DAP) – Specification

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 020, *Agriculture and agrochemicals*.

Fertilizers – Mono-Ammonium Phosphate and Di-Ammonium Phosphate (MAP & DAP) – Specification

1 Scope

This draft East African standard prescribes requirements, methods of sampling and tests for Mono-Ammonium Phosphate and Di-Ammonium Phosphate (MAP & 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.

ISO 8157, *Fertilizers and Soil Conditioners – Vocabulary*

EAS 913, *Fertilizer – Methods of sampling*

DAES 1166:2023, Code of Practice for Handling and Storage of Bagged Fertilizer or fertilizer supplements
AOAC 965.08, *Water (free) in fertilizers — Vacuum-desiccation*

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

lead and mercury contents
ISO 8397, *Solid fertilizers and soil conditioners – Test sieving*

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

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

ISO 5316, *Fertilizers – Extraction of water-soluble phosphate*

ISO 6598, *Fertilizers- Determination of phosphorous content- Quinolinephosphomolybdate- Gravimetric method*

AOAC2006.03, *Arsenic, Cadmium, Cobalt, Chromium, Lead, Molybdenum, Nickel, and selenium in fertilizers — Microwave digestion and inductively coupled plasma-optical emission spectrometry*

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

ISO 148-2, *Fertilizers and liming materials - Sampling and sample preparation - Part 2: Sample preparation*

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

3 Terms and definitions

For the purpose of this Tanzania standard, terms and definitions given in ISO 8157 shall apply

4 Requirements

4.1 Physical requirements

4.1.1 MAP and DAP fertilizers shall be;

- a) in the form of crystals or granules; the fertilizers shall be
- b) free flowing and from any foreign matter.

4.1.2 The particle size of MAP and DAP fertilizers, when tested in accordance ISO 8397, shall be such that not less than 90% by mass 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 sieve.

4.1.3 The colour of MAP&DAP fertilizers shall be uniform.

4.2 Chemical requirements

The MAP and DAP fertilizers shall comply with the requirements given in Table 1.

Table 1 – Chemical requirements for Mono-Ammonium Phosphate (MAP) and Di – Ammonium Phosphate (DAP) fertilizers

Characteristic	Requirement		Test Method
	MAP	DAP	
Ammoniacal nitrogen, as N, per cent by mass, <i>min</i>	11	18	ISO 5314
Available phosphates, as P ₂ O ₅ , per cent by mass, <i>min</i>	50	46	ISO 6598
Water soluble phosphates, as P ₂ O ₅ , per cent by mass, <i>min</i>	44	44	ISO 5315
Moisture content, per cent by mass, <i>max</i>	1.5	1.5	AOAC 965.08

5 Contaminants

Heavy metal contamination in Single Super Phosphate fertilizer shall not exceed the limits given in table 2 when determined by the methods prescribed therein.

Table 2 – Requirements for heavy metal contaminants

Element	Requirement	Test Method
Arsenic, mg/kg, <i>max</i>	40	ISO 17318
Cadmium, mg/kg, <i>max</i>	45	ISO 17318
Mercury, mg/kg, <i>max</i>	0.1	ISO 17318
Selenium, mg/kg, <i>max</i>	1	ISO 17318
Lead, mg/kg, <i>max</i>	30	ISO 17318
Chromium, mg/kg, <i>max</i>	500	ISO 17318

Nickel, mg/kg, max

120

AOAC 2006.03

6 Sampling

Sampling and sample preparation of MAP&DAP fertilizers shall be carried out as prescribed in ISO 14820-1 and ISO 14820-2 respectively

7 Packaging

The fertilizer shall be packaged in materials that are clean and non-defective that protect the product from physical, chemical and moisture contamination and withstand multiple stages of handling (transportation and storage).

8 Labelling

The fertilizer package shall be legibly and indelibly marked in accordance with ISO 7409 in either English or any other official language.

9 Storage

MAP and DAP fertilizers shall be stored, handled and transported as prescribed in DEAS 1166:2023.

Bibliography

- India control order 1985 as amended on 2003.
- TZS 893, Fertilizers – Mono-Ammonium Phosphate and Di-Ammonium Phosphate (MAP & DAP) – Specification

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