KENYA STANDARD **KS 2427 2018**

Soluble Compound fertilizer — Specification

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TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Government Chemist
Mea Ltd.
Chemagro Ltd
Kenya Plant Health Inspectorate Services (KEPHIS)
Kenya Agricultural and livestock research organization
Yara East Africa Ltd
Kenya Tea Development Agency
University of Nairobi
Ministry of Agriculture, Livestock and fisheries
Amiran (K) Ltd
Toyota Tshusho Fertilizers
Elgon chemicals
Osho chemicals
OCP Kenya Ltd.
Kel Chemicals
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

KENYA STANDARD

Soluble Compound fertilizer, — Specification

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Foreword

This Kenya standard has been prepared by the technical committee on fertilizers and soil conditioners under the guidance of the standards projects committee in accordance with the procedures of the Kenya Bureau of standards.

The rapid expansion of horticulture and irrigated farming has resulted in development of new technologies that aim at maximising nutrient use efficiency and offer opportunities for quick responses to plants nutrients needs. This has led to a need to develop special fertilizers that can be applied using these new technologies.

Environmental aspects related to fertilizer raw materials have been taken care of, thus limits for heavy metals have been specified. Recent Association of official Analytical chemists (AOAC) methods of analysis have been adopted.

During the preparation of this standard, reference was made to the following documents:

1. FAO mineral fertilizer specifications, 2012
2. Indian specifications for fertilizers
3 .EU cadmium limits in Fertilizers

Acknowledgement is hereby made for assistance derived from this source.

Soluble Compound fertilizer, — Specification

1 Scope

This Kenya Standard specifies the requirements, methods of sampling and tests for soluble compound fertilizers,

2 Requirements

2.1 Description

The fertilizer shall be homogenous and be in the form of granules, powder, paste, pellets, prills or crystals.

2.2 Physical

The fertilizer product shall be fully soluble in water

2.3 Chemical

compound fertilizer shall contain two or more of the following primary plant nutrient elements intended for fertilizing of crops: nitrogen (N), phosphorus (P) and potassium (K). The lower limit of the declared value of any of the primary nutrients shall comply with the tolerances stated in the table 1 below

Table 1 Tolerances for declared primary nutrients

SL NO	nutrient content	tolerances in units
i	less than 15	0.5
ii	15 to 21	0 .6
iii	more than 21	0.7

Besides the primary nutrient elements, the fertilizer may also contain one or more of the following elements: Boron, Calcium, Cobalt, Copper, Iron, Magnesium, Manganese, Molybdenum, Sulphur and Zinc, which, when present for the purpose of fertilizing of crops and mentioned in any form or manner, shall be guaranteed on the elemental basis. Sources of the elements guaranteed and proof of availability shall be provided upon request. The elements shall be mentioned and guaranteed if their percentage values by mass are equal to or more than the values shown in Table 2

Table 2 — Minimum percentage for guarantee

SL NO	Element	%
i)	Boron (B)	0.02
ii)	Calcium (Ca)	1.00
iii)	Cobalt (Co)	0.0005
iv)	Copper (Cu)	0.05
v)	Iron (Fe)	0.10
vi)	Magnesium (Mg)	0.60
vii)	Manganese (Mn)	0.50
viii)	Molybdenum (Mo)	0.0005
ix)	Sulphur (S)	1.00
x)	Zinc (Zn)	0.05

2.4 The moisture content shall not be more than 0.5 % m/m.

2.5 pH Value

The pH value of a 10 % (m/v) aqueous solution, of the fertilizer, shall not be less than 4.5.

2.6 Heavy metal contaminants

The heavy metal contaminants, if present, shall not exceed the limits stipulated in Table 3.

Table 3 — Heavy metal contaminants limits

SL NO	Parameter	Limits in ppm	Test method
i)	Arsenic, As, max.	20.0	AOAC
ii)	Cadmium, Cd, max.	15.0	AOAC
iii)	Mercury, Hg, max.	0.1	AOAC
iv)	Selenium, Se, max.	1.0	AOAC
v)	Lead, Pb, max.	30.0	AOAC
vi	Chromium	500	AOAC

3 Packaging and marking /labelling

3.1 Packaging

i) The fertilizer shall be packaged in materials that ensure the product integrity and quality and protect it from physical, chemical and moisture contamination.

ii) The fill of the package shall comply with the weight and measures act CAP 513 of the laws of Kenya

iii The disposal of used package and condemned fertilizer shall comply with EMCA 1999 no.8 of the disposal of solids and liquid wastes

3.2 Marking /Labelling

The following information shall be clearly and indelibly marked/labelled on each package.

a) Name, address and physical location of manufacturer/packer/importer;

b) name of the fertilizer, i.e."Soluble Compound Fertilizer

c) guaranteed percentage by mass of each of the primary plant nutrients (NPK);

d) name and percentage by mass of any other guaranteed element if present;

e) date of manufacture,

f) expiry date

g) batch/lot number;

h) the form in which nutrient is present;

i) the percentage of water-soluble phosphates;

j) handling instructions;

k) the net weight of the fertilizer in the package;

l) country of origin;

m) A cautionary statement on any micronutrient toxicity.

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4 Certificate of analysis

Each consignment shall be accompanied by a certificate of analysis.

5. Sampling

This shall be done according to ISO standards ISO 8633 and 8634

ISO 8633-Solid fertilizers -- Simple sampling method for small lots
ISO 8634- Solid fertilizers -- Sampling plan for the evaluation of a large delivery