

DRAFT EAST AFRICAN STANDARD

Inorganic Foliar Fertilizer— Specification

EAST AFRICAN COMMUNITY

Copyright notice

This EAC document is copyright-protected by EAC. While the reproduction of this document by participants in the EAC standards development process is permitted without prior permission from EAC, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from EAC.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to EAC's member body in the country of the requester:

© East African Community 2015 — All rights reserved
East African Community
P.O.Box 1096
Arusha
Tanzania
Tel: 255 27 2504253/8
Fax: 255 27 2504481/2504255
E-mail: eac@eachq.org
Web: www.eac-quality.net

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement. Violators may be persecuted

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*.

Inorganic Foliar Fertilizer— Specification

1 Scope

This draft East African standard specifies requirements, methods of sampling and test for inorganic foliar fertilizers

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AOAC 928.02, *Chlorine (water-soluble) in fertilizers*

AOAC 965.11, *Cobalt in fertilizers*

AOAC 975.01, *Copper in fertilizers*

AOAC 975.02, *Zinc in fertilizers*

AOAC 980.01, *Iron in fertilizers*

AOAC 980.02, *Sulfur in fertilizers*

AOAC 982.01, *Boron (acid- and water-soluble) in fertilizers*

AOAC 983.04, *Sodium in fertilizers*

AOAC 984.01, *Magnesium (acid-soluble) in fertilizers*

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

ISO 7888, *Water quality—Determination of electrical conductivity*

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

ISO 8633, *Solid fertilizers — Simple sampling method for small lots*

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 standard, the terms and definitions given in ISO 8157 and the following apply;

electrical conductivity

a measure of the total soluble salts, or the soluble nutrients (or ions) present in a fertilizer

4 Requirements

4.1 General requirements

Inorganic foliar fertilizer shall be;

- free from foreign matter and odour
- safe to humans, plants and environment
- an aqueous solution, suspension concentrate or if in solid form it shall be completely soluble in water

4.2 Specific requirements

4.2.1 Nutrient guarantees

4.2.1.1 If any of the primary nutrients is declared, the lower limit shall not vary by more than 0.7 units.

4.2.1.2 Foliar fertilizers shall conform to the minimum limits for the following elements, if declared.

Table 1 — Minimum concentration for declared secondary and micro nutrients

SN	Element	Minimum conc. %	Test method
i)	Boron (B)	0.02	AOAC 982.01
ii)	Calcium (Ca)	1.00	AOAC 945.04
iii)	Cobalt (Co)	0.0005	AOAC 965.11
iv)	Copper (Cu)	0.05	AOAC 975.01
v)	Iron (Fe)	0.10	AOAC 980.01
vi)	Magnesium (Mg)	0.60	AOAC 984.01
vii)	Manganese (Mn)	0.05	AOAC 940.02
viii)	Molybdenum (Mo)	0.0005	AOAC 2006.03
ix)	Sulphur (S)	1.00	AOAC 980.02
x)	Zinc (Zn)	0.05	AOAC 975.02
Xi)	Nickel (Ni)	0.0010	AOAC 975.02
Xii)	Sodium (Na)	0.1000	AOAC 983.04

4.2.2 Electrical conductivity

Inorganic foliar fertilizers shall conform to the Maximum limit of 10 ms/cm for Electrical Conductivity (0.1% solution, 25 °C), when tested in accordance with ISO 7888

4.3 Chelating compounds

If chelating agents are used, they shall be stated.

5 Heavy Metal Contaminants

Heavy metal contaminants in the fertilizers shall conform to the limits given in Table 2 when tested with the method specified therein.

Table 2 — Heavy metal contaminants limits

Sn	Parameter	Limits in mg/kg	Test method
i)	Arsenic, As, max.	20.0	AOAC 2006.03
ii)	Cadmium, Cd, max.	7.0	AOAC 2006.03
iii)	Mercury, Hg, max.	0.1	AOAC 2006.03
iv)	Lead, Pb, max.	30.0	AOAC 2006.03
v)	Selenium Se, max.	1.0	AOAC 2006.03

6 Sampling

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

7 Packaging

The fertilizer shall be packaged in materials that are clean and non-defective that protects the product from physical, chemical and moisture (for solid) contamination/damage 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 with the following information:

- a) name of product as “Inorganic Foliar fertilizer”;
- b) name, address and physical location of manufacturer/packer/importer;
- c) guaranteed percentage by weight of each of the nutrients;
- d) date of manufacture;
- e) expiry date;
- f) batch/lot number;
- g) the form in which nutrient is present;
- h) Stage of crop growth to be applied;
- i) name of the chelating material used in case of trace elements;
- j) storage instructions;

- k) the net weight or volume of the fertilizer in the package;
- l) country of origin;
- m) disposal instructions and
- n) Instructions for use which should include but not limited to the following:
 - i) not to be applied during periods of water stress unless when under irrigation,
 - ii) Timing and frequency of application
 - iii) recommended weather for spraying.
 - iv) application rates.
 - v) information on compatibility with fungicides, insecticides or herbicides.

DRAFT FOR COMMENTS ONLY

Bibliography

- KS 2228, Foliar fertilizer (inorganic) — Specification
- US 1660, Inorganic foliar fertilizer — Specification

DRAFT FOR COMMENTS ONLY

DRAFT FOR COMMENTS ONLY