
Fertilizers — Inorganic foliar fertilizer — Specification



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Foreword

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ARSO Central Secretariat
International House, 3rd Floor
P.O. Box 57363 — 00200 City Square,
NAIROBI, KENYA

Tel: + 254-20-2224561, +254-20-311641, +254-20-311608

E-mail: arso@arso-oran.org

Web: www.arso-oran.org

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Fertilizer — Inorganic foliar fertilizer — Specification

1 Scope

This Draft African Standard specifies the requirements sampling and test methods for inorganic foliar 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 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, 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*

3 Terms and definitions

For the purposes of this document, the following terms and definitions in ISO 8157 and the following 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/>

electrical conductivity

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

4 Requirements**4.1 Physical requirements**

The material shall be an aqueous solution or if in solid form it shall be completely soluble in water.

4.2 Chemical requirements**4.2.1 Nutrient guarantees**

Inorganic foliar fertilizer shall contain at least one primary nutrient (N, P₂O₅ or K₂O), with a minimum declaration threshold of 1%, or at least one of the following secondary or micro nutrients, conforming to the minimum declaration levels specified in Table 1:

Table 1 — Minimum concentration for 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 928.02
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 such as EDTA, NTA and IDHA are used, they shall be stated.

4.4 Heavy metal contaminants

Inorganic foliar fertilizers shall not exceed the limit for heavy metals indicated in Table 2 when tested with the methods specified therein.

Table 2 — Heavy metal contaminants limits

S/N	Parameter	Limit mg/kg	Test method
i.	Arsenic, As, max.	20.0	AOAC 2006.03
ii.	Cadmium, Cd, max.	7.0	
iii.	Mercury, Hg, max.	0.1	
iv.	Lead, Pb, max.	30.0	

5 Packaging

The fertilizer shall be packed in clean, non-defective and appropriate containers that protect its 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 inorganic foliar fertilizer shall be legibly and indelibly labelled in accordance with Globally Harmonized System (GHS) and with the following information.

- name of product as “Inorganic foliar fertilizer”;
- name, address and physical location of manufacturer/packer/importer;
- guaranteed percentage by mass of each of the nutrients;
- date of manufacture;
- expiry date;
- batch/lot number;
- the form in which nutrient is present;
- stage of crop growth to be applied;
- name of the chelating material used in case of trace elements;
- storage instructions;
- the net weight (in SI units);

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- l) country of origin;
- m) Instructions for use; and
- n) disposal instructions.

7 Sampling

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

Bibliography

- [1] KS 2228:2014, *Kenya Standard — Foliar fertilizer — Specification*
- [2] US 1660:2017, *Inorganic foliar fertilizer — Specification*

