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Potassium chloride (muriate of potash) fertilizer — Specification

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Foreword

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This African Standard was prepared by the ARSO Technical Harmonization Committee Number 22 on Agrochemicals (ARSO/TC 22).

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Potassium chloride (muriate of potash) fertilizer — Specification

1. Scope

This draft African Standard specifies the requirements, sampling and test methods for potassium chloride (muriate of potash) fertilizer.

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 Official Method 983.04, *Sodium in fertilizers — Atomic absorption spectrophotometric method*

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

EN 12048, *Solid fertilizers and liming materials — Determination of moisture content — Gravimetric method by drying at 105□2 □C*

EN 15477, *Fertilizers — Determination of the water-soluble potassium content*

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

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

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*

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

ISO 17319, *Fertilizers and soil conditioners — Determination of water-soluble potassium content — Potassium tetraphenylborate gravimetric method*

3. Terms and definition

For the purpose of this standard, the following terms and definitions apply.

3.1 potassium chloride/ muriate of potash
product obtained from crude potassium salts or brines containing potassium chloride as its essential ingredient

3.2 soil conditioner
organic/inorganic material added to soils to improve the physical and/or chemical properties, and/or the biological activity of soils with or without a declarable content of nutrients

4. Requirements

4.1 General Description

The fertilizer shall be in the form of free-flowing powder, crystals/or granules and free from visible contamination.

4.2 Physical requirements

4.2.1 When test sieved in accordance with ISO 8397, the particle size for granular fertilizer shall be such that not less than 90 %, by mass of the fertilizer shall be of particles in the size range of 1 mm to 4 mm.

4.2.2 when tested in accordance with ISO 8397, the particle size for powder fertilizer shall be such that not less than 65 % of the material shall pass through 1.7 mm IS sieve and be retained on 0.25 mm IS sieve.

4.3 Chemical requirements

The fertilizer shall comply with the requirements given in Table 1 when tested in accordance with the methods specified herein.

Table 1 — Chemical requirements for potassium chloride fertilizer

Sl. No.	Characteristic	Requirement	Test method
i)	Mass fraction of Potash content, (as K_2O), %, min.	60,0	ISO 17319/ EN 15477
ii)	Mass fraction of Sodium content (as NaCl), %, max.	3,5	AOAC 983.04
iii)	Mass fraction of Moisture, %, max.	0,5	EN 12048

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

Sl. No.	Parameter	Maximum Limits, mg/kg	Test method
i)	Arsenic, As.	20,0	AOAC 2006.03/ ISO 17318
ii)	Cadmium, Cd.	7,0	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
	Nickel, Ni	120,0	AOAC 2006.03/
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

Potassium chloride fertilizer shall be packed in clean, non-defective and appropriate containers that will protect it integrity

during handling, transportation and storage.

NOTE The product may be also supplied in bulk containers.

6.2 Labelling

In addition to the labeling requirements of ISO 7409, each container of potassium chloride fertilizer shall be legibly and indelibly labeled with the following particulars in accordance with Globally Harmonized System (GHS):

a) name, address and physical location of the manufacturer/packer/importer;
b) name of the product;
c) the minimum potash content as K_2O in percentage by mass;
d) net weight
e) handling instructions;
f) country of origin;
g) storage instructions;
h) batch/ lot number;
i) date of manufacture;
j) expiry date
k) instructions for use

7. Certificate of analysis

A certificate of analysis stating the minimum percentage levels of plant nutrient elements shall accompany every lot or consignment of the fertilizer.

8. Material safety

Each container must be accompanied by a Material Safety Data Sheet (MSDS) and Technical Data Sheet (TDS).