

**Granulated superphosphate
fertilizer- Specification**

PUBLIC REVIEW DRAFT

TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

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Kel Chemicals Ltd.
Amiran (K) ltd
Chemagro Ltd.
Yara East Africa
Kenya Tea Development Agency.
Kenya Plant Health Inspectorate Services (KEPHIS)
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Elgon chemicals
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University of Nairobi-Department of plant science and crop protection
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REVISION OF KENYA STANDARDS

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KENYA STANDARD

KS 46: 2018

Granulated superphosphate fertilizers- Specification

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Foreword

The Fourth edition of this Kenya Standard was prepared by the Technical Committee on Fertilizers and soil conditioners under the guidance of the Standards Projects Committee and it is in accordance with the procedures of the Kenya Bureau of Standards.

Heavy metal contamination limits for As, Cd, Hg, Se, Pb and Cr have also been specified, as is the case with other fertilizer products, due to the environment aspect associated with rock-phosphate.

The particle size has been harmonized and AOAC methods of analysis have been adopted in the revision.

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

FAO Mineral fertilizer Specifications, 2012
EU Limits on cadmium, 2018

The assistance derived from the above sources is hereby acknowledged with thanks.

KENYA STANDARD
Granulated superphosphate fertilizers- Specification

1. SCOPE

This Kenya Standard specifies requirements, sampling method and test methods for granulated superphosphate fertilizers.

2. DEFINITIONS

For the purposes of this standard the following definitions in addition to those contained in KS ISO 8157 shall apply:

2.1 superphosphate — The product obtained by treating phosphate rock with sulphuric acid. It is also known as single superphosphate.

2.2 concentrated superphosphate — The product obtained by treating phosphate rock with phosphoric acid or phosphoric acid and sulphuric acid. It is also called 'enriched superphosphate' or 'triple superphosphate'.

2.3 Available phosphorus — The fraction of phosphorus available to plants. This is the sum of the water-soluble and citrate-soluble phosphorus.

2.4 total phosphorus — The sum of available and citrate-insoluble phosphorus.

3 Requirements

3.1 Description

The fertilizer shall be homogenous and free-flowing, in the form of granules or prills

3.2. General requirements

- a) The fertilizer shall be free from foreign matter
- b) It shall be free from dust and lumps
- c) Not less than 90% of the material shall pass through 4 mm IS sieve and be retained on 1 mm IS sieve. Not more than 5% shall be below 1 mm size

TABLE 1. REQUIREMENTS FOR SUPERPHOSPHATES

Sl No	CHARACTERISTICS	REQUIREMENTS, PER CENT, BY MASS			METHODS OF TEST
		Grade 1 Single Superphosphate	Grade 2 Single Superphosphate	TRIPLE Superphosphate	
(i)	Water-soluble phosphate (as P ₂ O ₅), min	18.0	14.5	40	AOAC
(ii)	Available phosphate (as P ₂ O ₅), min	21.5	16.5	46.0	AOAC
(iii)	Free phosphoric acid (as P ₂ O ₅), Max	4.0	4.0	4.0	AOAC
(iv)	Moisture, max	5.0	5.0	4.0	AOAC

3.4. Heavy metal contaminants

The heavy metal contaminants, if present, shall not exceed the limits stipulated in Table 2.

Table 2 — 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

4. PACKAGING AND MARKING

4.1 Packaging — The material shall be packaged in suitable containers and quantities.

3.1.1 The fertilizer shall be packaged in materials that ensure the product integrity and quality and protect it against physical damage, chemical and moisture contamination.

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

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

4.2 Marking — The following information shall be marked on each packaging container:

4.2.1 Name and address of the manufacturer/packer/ importer.

4.2.2 Name of the product.

4.2.3 Grade of single superphosphate or concentrated superphosphate.

4.2.4 The minimum water-soluble phosphates stated as P₂O₅ content of the material.

4.2.5 The net weight of the material in the package.

4.2.6 The content of fluorine and sulphur.

4.2.7 Handling instructions.

4.3 A certificate of analysis shall accompany each consignment.

5. SAMPLING

This shall be done according to ISO standards ISO 8633 and 8634- Fertilizers-Sampling.