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भारतीय मानक मसौदा

उर्वरक भौतिक मिश्रण — विशिष्टि

(आई एस 7863 का पहला पुनरीक्षण)

Draft Indian Standard

FERTILIZER PHYSICAL MIXTURES — SPECIFICATION

(First Revision of IS 7863)

ICS 65.080

Soil Quality and Fertilizers Sectional
Committee, FAD 07

Last date of comments: 17 May 2024

FOREWORD

(Adoption clauses will be added later)

The NP and NPK fertilizer physical mixtures are made in the country in substantial quantities. In order that these mixtures continue to remain in a serviceable physical condition from the time they are packed to their use by a farmer, it is necessary to control their physical characteristics during production and to follow good practices in their packing, handling and storage during transit and marketing. The detailed analysis of these mixtures varies in order to suit different soils and crops, and presently the State Government have permitted specific mixtures to be manufactured and marketed. Therefore, while the analysis of individual fertilizer mixtures has been left open in this standard, the provisions with regard to the manner of marking the analysis on the bags and the tolerances in the variation of the actual analysis from that marked on the bag are prescribed in this standard.

This standard was first published in 1975. In this revision, the standard has been brought out in the latest style and format of the Indian Standards, and references to Indian Standards wherever applicable have been updated. It also incorporates two amendments issued to the previous version of this standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1 SCOPE

1.1 This standard prescribes the requirements and test methods for fertilizer physical mixtures in pulverized form, and also prescribes the permissible tolerances in the analysis of the mixtures.

1.2 Fertilizer mixtures in granulated form are not covered under this standard.

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text constitutes provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

<i>IS No.</i>	<i>Title</i>
IS 5985 : 1985	Code of practice for handling and storage of bagged fertilizers (<i>first revision</i>)
IS 6092 (Part 1) : 1985	Methods of sampling and test for fertilizers: Part 1 Sampling (<i>first revision</i>)
IS 6092 (Part 2) : 1985	Methods of sampling and test for fertilizers: Part 2 Determination of nitrogen (<i>first revision</i>)
IS 6092 (Part 3/Sec 2) : 1985	Methods of sampling and test for fertilizers: Part 3 Determination of phosphorus: Sec 2 Test methods not covered under dual number standards (<i>second revision</i>)
IS 6092 (Part 4) : 1985	Methods of sampling and test for fertilizers: Part 4 Determination of potassium (<i>first revision</i>)
IS 6092 (Part 6) : 1985	Methods of sampling and test for fertilizers: Part 6 Determination of moisture and impurities (<i>first revision</i>)

3 REQUIREMENTS

3.1 Physical Condition

The fertilizer mixture when examined in unopened packages shall be in a free-flowing condition.

3.2 Free Acidity and Moisture

The material shall comply with the requirements given below:

SI No.	Characteristic		Requirements	Method of Test (Ref to)
i)	Free acidity, percent by mass, <i>Max</i>	For mixtures containing superphosphate or triple superphosphate as an ingredient	2.0 (as phosphorus pentoxide)	IS 6092 (Part 3/ Sec 2)

		For mixtures not containing superphosphate or triple superphosphate as an ingredient	1.0 (as sulphuric acid)	IS 6092 (Part 6)
ii)	Moisture, percent by mass, <i>Max</i>	For mixtures containing superphosphate or triple superphosphate as an ingredient	5.0	IS 6092 (Part 6)
		For mixtures not containing superphosphate or triple superphosphate as an ingredient	1.5	

3.3 NPK Analysis

The content of nitrogen, phosphorus and potassium in the fertilizer mixture shall be in accordance with the rules and regulations prescribed by the government and shall be marked on the bag. When the fertilizer mixture is actually analyzed according to the methods laid down in IS 6092 (Parts 2 to 4), the actual analysis found shall not differ from the marked analysis by more than the following tolerances:

a) For percent total nitrogen content, total phosphorus (as P ₂ O ₅) content, water soluble phosphorus (as P ₂ O ₅) content, and water soluble potash (as K ₂ O) content	Minus 5 percent of the marked percent content for each of them
b) For the sum of all percent nutrient contents mentioned above	Minus 5 percent of the sum of the marked percent contents of all nutrients mentioned in (a)

4 PACKING

4.1 As most of the fertilizer mixtures are hygroscopic it is essential that the packing should be capable of providing adequate protection to the contents from absorption of moisture by the use of inner plastics liner. Further, the packing should be physically strong enough to withstand the normal stresses of handling in stacking, transport and storage.

4.2 It is recommended that fertilizer mixtures are packed in bags as agreed to between the purchaser and the supplier.

5 MARKING

5.1 The packages shall be securely closed and marked with the following information:

- a) (N-P-K) Analysis of the mixtures, N standing for total nitrogen (ammoniacal/nitrate/urea) content, P for total phosphorus (P_2O_5) content and K for total potash (K_2O) content. In addition, the water soluble phosphorus (P_2O_5) content shall also be shown;
- b) The words ‘Fertilizer Physical Mixture’ and specific information if superphosphate or triple superphosphate is one of the ingredients;
- c) Net quantity of contents;
- d) Name of the manufacturer and recognized trade-mark, if any; and
- e) Batch number in code or otherwise.
- f) Any other requirements as specified under the *Fertilizer (Control) Order*, 1985 and the *Legal Metrology (Packaged Commodities) Rules*, 2011.

5.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

6 HANDLING AND STORAGE

Factors to be borne in view in the handling and storage of fertilizer mixtures shall be as prescribed in IS 5985.

7 SAMPLING

7.1 The method for drawing representative samples of the material shall be as prescribed in IS 6092 (Part 1).

7.2 Sample Preparation

The bags selected for drawing samples shall be emptied, and the contents of each shall be well-mixed and reduced by the process of coning and quartering.

7.3 Number of Tests

Tests for all the requirements given shall be conducted on the composite test samples.

7.4 Criteria for Conformity

For declaring the conformity of the lot to the requirements of the specification, the test results on the composite test sample shall satisfy all the requirements specified in **3**.