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Fertilizers and liming materials — Sampling and sample preparation —

Part 2: Sample preparation

Engrais et amendements minéraux basiques — Échantillonnage et préparation de l'échantillon —

Partie 2: Préparation des échantillons

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

ISO 14820-2:2016 was prepared by CEN/TC 260, *Fertilizers and liming materials* (as EN 1482-2:2007) and was adopted without modification other than those stipulated below by ISO/TC 134, *Fertilizers and soil conditioners*.

— The EN references (EN 1482-1 and EN 1482-2) have been changed to ISO references (ISO 14820-1 and ISO 14820-2).

— The definition in 3.2 have been modified slightly to align it with that in ISO 8157:2015. ISO 8157 has been added to the Bibliography.

— Clause 5 has been renumbered.

— In 5.4 (formerly 5.5) and 6.4.2, notes have been changed to full text.

ISO 14820 consists of the following parts, under the general title *Fertilizers and liming materials — Sampling and sample preparation*:

— *Part 1: Sampling*

— *Part 2: Sample preparation*

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Introduction

This part of ISO 14820 covers the following aspects of sample preparation, derived from the International Standards and documents indicated but presented in a simplified and condensed form. The titles of these International Standards are given in the Bibliography.

— Reduction and preparation of samples for analysis: ISO 7410, ISO 7742, ISO 8358 and EEC 77/535 (superseded by Regulation (EC) No 2003/2003);

— Sampling reports: ISO 5306 and EEC 77/535 (superseded by Regulation (EC) No 2003/2003).

ISO 14820-1 covers the sampling of fertilizers and liming materials.

Figure 1 gives a schematic diagram of the sampling and sample preparation process for solids.

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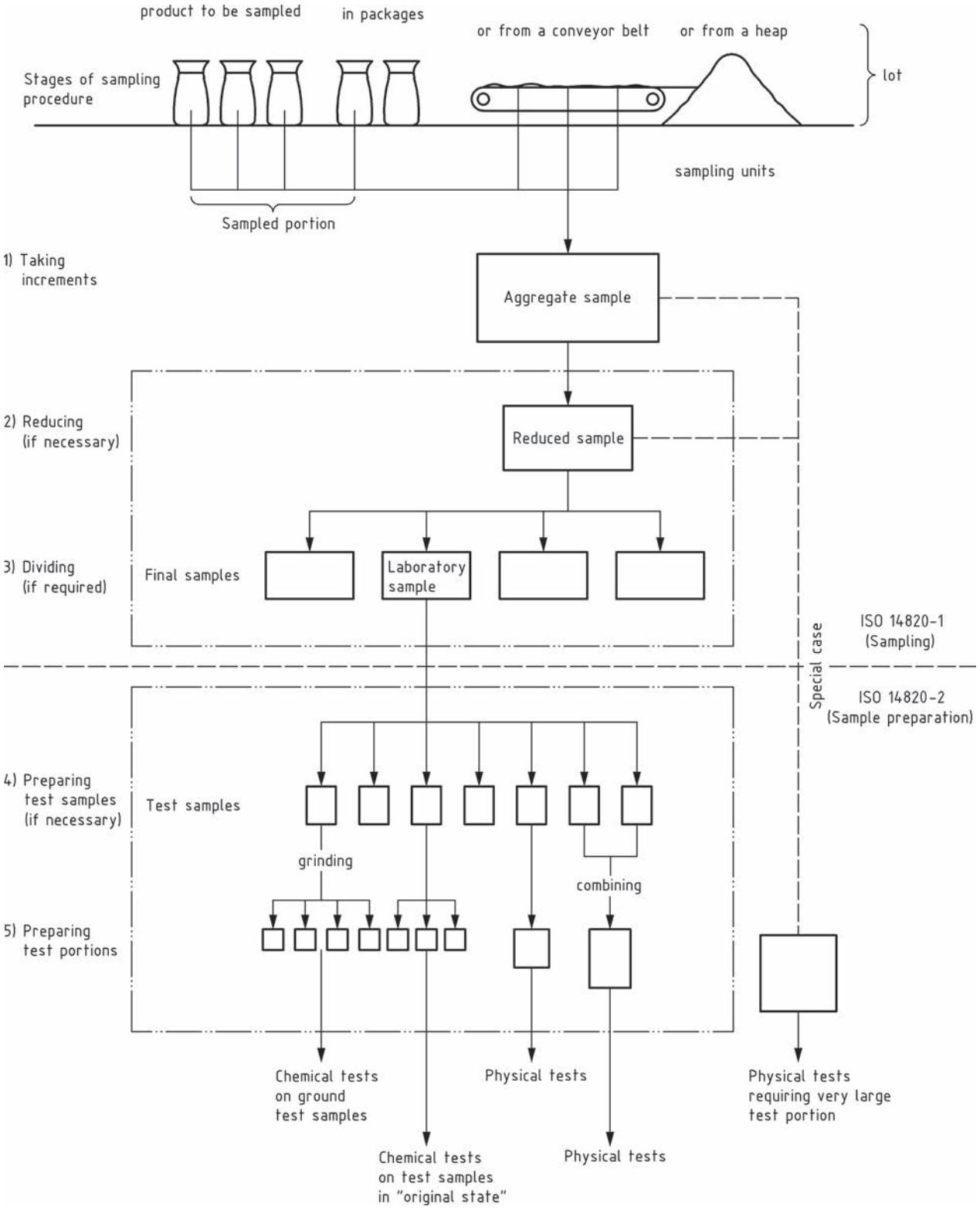


Figure 1 — Schematic diagram of sampling process for solids

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Fertilizers and liming materials — Sampling and sample preparation —

Part 2: Sample preparation

1 Scope

This part of ISO 14820 specifies methods for the reduction and preparation of samples of fertilizers and liming materials and sets out the requirements for sample preparation reports. It also specifies methods for the preparation of test samples and test portions from laboratory samples of fertilizer for subsequent chemical or physical analysis. It does not cover the preparation of samples for certain physical tests which require test portions of more than 2 kg. It is applicable to all fertilizers.

NOTE The term "fertilizer" is used throughout the body of this part of ISO 14820 and is taken to include liming materials unless otherwise indicated.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 14820-1:2016, *Fertilizers and liming materials — Sampling and sample preparation — Part 1: Sampling*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
division
process of producing a number of representative smaller portions, approximately equal in mass to each other, from a larger mass

3.2
final sample
representative part of the reduced sample or, where no intermediate reduction is required, of the aggregate sample

Note 1 to entry: Often, more than one sample is prepared, at the same time, from the reduced sample (or from the aggregate sample). One or more of these final samples will be used as a laboratory sample or as laboratory samples, while others may be stored for reference purposes.

[SOURCE: ISO 8157:2015, 2.6.6]

3.3
laboratory sample
final sample intended for laboratory inspection or testing

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3.4
reduction
process of producing a representative smaller mass of fertilizer from a larger mass, with the remainder being discarded

3.5
test portion
quantity of material taken from the test sample (or if both are the same, from the laboratory sample) and on which the test or observation is actually carried out

3.6
test sample
sample prepared from the laboratory sample and from which test portions will be taken

4 Principle

Reduction and division of the laboratory sample, as necessary, to produce test samples. Preparation of test portions from the test samples by division, with or without previous grinding, or by combination, as appropriate.

5 Apparatus

Apparatus used in the preparation and storage of samples shall be clean and dry and made from materials which will not affect the characteristics of the fertilizer.

5.1 Rotary sample divider, conforming to the requirements specified in ISO 14820-1:2016, 5.6.3, or **riffle divider**, conforming to the requirements specified in ISO 14820-1:2016, 5.7.2.

5.2 Sample grinder, capable of taking the whole sample at one pass and, preferably, totally enclosed. It shall have a screen, or other mechanism without a screen, which allows the ground material to pass through the machine into a collecting vessel and away from the cutters or grinding discs, to avoid over-grinding. In the case of a grinder with screens, the fineness of grind can be adjusted by the fitting of different mesh screens. Grinding shall continue until as much as possible of the fertilizer has passed through the machine.

NOTE If the grinder is of the open type, the moisture content of the fertilizer can change significantly during grinding.

Any machine used for grinding samples as required by this part of ISO 14820 shall be checked for satisfactory performance. Particular points to be checked are:

a) the fineness of grinding achieved;

b) the temperature rise of the material being ground (see 6.3);

c) non-contamination of the sample.

5.3 Mortar and pestle, of suitable material and size.

5.4 Test sieves, conforming to ISO 3310-1, of nominal aperture sizes 1,0 mm, 0,5 mm and 0,18 mm.

In cases where national regulations or the nature of the material require sieves of different aperture sizes, these may be used but the fact should be noted in the sample preparation report.

5.5 Sample containers, made of plastics material and/or glass, or any other material of adequate resistance and fitted with air-tight closures.

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