

# ISO 14820-1:2016-05 (E)

## Fertilizers and liming materials - Sampling and sample preparation - Part 1: Sampling

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>4</b>	<b>Sampling plans and quantitative data .....</b>	<b>2</b>
4.1	General .....	2
4.2	Sampling plans .....	3
4.2.1	Determination of the number of sampling units which form the sampled portion3 4.2.2	
	Identification of the sampling units to be sampled .....	4
4.2.3	Collection of increments .....	4
4.3	Quantitative data .....	5
4.3.1	Mass of increments .....	5
4.3.2	Mass of single aggregate/reduced samples .....	5
4.3.3	Mass of multiple aggregate samples .....	5
4.3.4	Mass of final sample .....	5
<b>5</b>	<b>Incremental sampling methods .....</b>	<b>5</b>
5.1	General .....	5
5.2	Solid fertilizer in bulk being moved by conveyor belt -- Stopping the belt method .....	5
5.2.1	General .....	5
5.2.2	Principle .....	6
5.2.3	Apparatus .....	6
5.2.4	Procedure .....	6
5.3	Solid fertilizer in bulk -- Mechanical sampling while in motion .....	6
5.3.1	General .....	6
5.3.2	Procedure .....	7
5.4	Solid fertilizer in bulk -- Manual sampling from falling stream .....	7
5.4.1	Principle .....	7
5.4.2	Apparatus .....	7
5.4.3	Procedure .....	7
5.5	Solid fertilizer in bulk -- Manual sampling method by moving the bulk .....	8
5.5.1	General .....	8
5.5.2	Procedure .....	9
5.6	Solid fertilizers in packages -- Reduction method using a rotary mechanical sample divider .....	9
5.6.1	General .....	9
5.6.2	Principle .....	9
5.6.3	Apparatus .....	9
5.6.4	Procedure .....	10
5.6.5	Precautions .....	11
5.7	Solid fertilizers in packages -- Reduction method using a riffle divider .....	11
5.7.1	General .....	11
5.7.2	Apparatus .....	11
5.7.3	Procedure .....	12
5.8	Sampling of solid fertilizers in packages -- Manual method .....	13
5.9	Sampling from intermediate bulk containers (IBC's) by controlled flow .....	14

5.9.1	General .....	14
5.9.2	Principle .....	14
5.9.3	Safety .....	14
5.9.4	Apparatus .....	15
5.9.5	Obtaining increments .....	17
5.9.6	Precautions .....	18
5.10	Sampling from intermediate bulk containers IBC's - Manual method .....	18
5.10.1	Principle .....	18
5.10.2	Procedure .....	18
5.11	Sampling of fluid fertilizers .....	18
5.11.1	General .....	18
5.11.2	Apparatus .....	19
5.11.3	Procedure .....	19
6	Reduction of aggregate sample .....	21
6.1	General .....	21
6.2	Solid fertilizers .....	21
6.2.1	General .....	21
6.2.2	Procedure .....	21
6.3	Fluid fertilizers .....	22
6.3.1	Apparatus .....	22
6.3.2	Procedure .....	22
7	Division into final samples .....	22
8	Practical arrangements for final (laboratory) samples .....	22
8.1	Containers .....	22
8.2	Sealing of containers .....	22
8.3	Labelling of final samples .....	23
8.4	Dispatch of the final sample .....	23
8.5	Storage of final samples .....	23
9	Sampling report .....	23
9.1	General .....	23
9.2	Essential information .....	23
9.3	Additional information .....	24
Annex A	(normative) Test for bias in mechanical samplers .....	25
Annex B	(informative) Examples of rotary sampled dividers .....	28
Annex C	(normative) Test for bias in a rotary divider .....	31
Annex D	(informative) Examples of apparatus for sampling fluid fertilizers .....	32
Annex E	(normative) Methods of mixing for fluid fertilizers .....	40
Bibliography	.....	47