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Fluid fertilizers — Preliminary visual examination and preparation of samples for physical testing

Engrais liquides — Examen visuel préliminaire et préparation des échantillons pour essais physiques

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Foreword

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International Standard ISO 10249 was prepared by Technical Committee ISO/TC 134, *Fertilizers and soil conditioners*, Subcommittee SC 3, *Physical properties.*

Annex A of this International Standard is for information only.

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Fluid fertilizers — Preliminary visual examination and preparation of samples for physical testing

1 Scope

This International Standard specifies both a procedure for preliminary examination of a single sample as received for testing, and a procedure for preparing a test sample by blending and reduction of a series of samples representative of a consignment or a bulk delivery of fluid fertilizer.

NOTE — This complements the corresponding standard for solid fertilizers (ISO 8358).

2 Requirements

2.1 General

It is essential that the physical examination and any physical tests of fluid fertilizers be made as soon as possible after sampling because of their sensitivity to both time and temperature.

2.2 Condition of container

Any defects in the laboratory sample container or any visible leakage shall be recorded. If it is possible that the contents have been affected, the sample shall be rejected.

2.3 Opening of container

All packing materials (e.g. sawdust) and other debris shall be removed from the outer surface of the container, particularly around the closure. The container shall be opened carefully so as not to disturb the contents. The examination shall be carried out as rapidly as possible so as to minimize possible evaporation losses.

3 Procedure

3.1 Procedures for solutions

3.1.1 Visual examination

3.1.1.1 Ullage

Record the approximate ullage (i.e. the air-space in the container above the contents of the container), expressed as a percentage of the total capacity of the container.

3.1.1.2 Surface

Record the presence of any films or incrustations and their extent. For analytical control purposes, when incrustation or surface matter is present it may be necessary to disperse it and include it in the sample for testing.

3.1.1.3 Separation of phases

Record any separation of the sample into phases, noting the volume and nature of these phases (see 3.2.1.5).

3.1.1.4 Clarity

Record the clarity, colour and temperature of the sample.

3.1.1.5 Consistency

Record whether the sample is free flowing or gelled.

3.1.1.6 Extraneous matter

Record the presence and nature of any extraneous matter in the sample. Remove it as carefully as possible.

3.1.2 Mixing

Mixing may be inappropriate if the sample has been submitted for physical assessment. Otherwise shake it or stir thoroughly.

3.2 Procedures for suspensions

3.2.1 Visual examination

Steps 3.2.1.1 to 3.2.1.5 shall be carried out with the minimum of disturbance to the sample.

3.2.1.1 Ullage

Record the approximate ullage (i.e. the air-space inside the container above the contents of the container), expressed as a percentage of the total capacity of the container.

3.2.1.2 Surface

Record the presence of any films or incrustations and their extent. For analytical control purposes, when incrustation or surface matter is present it may be necessary to disperse it and include it in the sample for testing.

3.2.1.3 Separation of phases

Record any separation of the sample into phases, and record the description of these phases.

3.2.1.4 Consistency

Record whether the sample is free flowing or gelled and note its temperature.

3.2.1.5 Settling

Record the type of settling (e.g. soft, hard or hard-dry). If the settling is hard and appears dry and crumbly inside a lump when cut with a clean spatula, describe it as "hard-dry".

3.2.1.6 Extraneous matter

Record the presence and nature of any extraneous matter in the sample. Remove it as carefully as possible.

3.2.2 Mixing (where appropriate)

3.2.2.1 Limitations

Samples which have gelled or show hard-dry settling (see 3.2.1.4 and 3.2.1.5) cannot be effectively re-incorporated or homogenized and may not be suitable for testing purposes.

3.2.2.2 General

During all the operations specified in 3.2.2.3 and 3.2.2.4, care shall be taken to ensure minimum loss of the aqueous phase. For this purpose, all operations shall be carried out as rapidly as practicable, consistent with satisfactory mixing.

3.2.2.3 Samples without hard settling

Mix the sample thoroughly, even if there is no perceptible settling. If the sample is small enough, a spatula is suitable, but for a larger sample a stouter stirrer is needed. Then firmly replace the lid of the container and thoroughly shake the contents, inverting the container as this is being done. Repeat the alternate stirring and