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Sampling Report Guidelines for Liquid (solution) Fertilizers

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This recommendation and its background documents are available to the general public on the IFA web site (www.fertilizer.org), or through written request to the IFA Secretariat.

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Background

Accurate and representative sampling is a crucial and challenging operation requiring knowledge of the product being sampled as well as the correct sampling process. Trading parties within the global fertilizer industry often apply different methods and procedures for sampling operations, which may subsequently lead to varying degrees of representativeness of the samples being taken.

Sampling methods should be applied with strict adherence by trained personnel with sampling experience. Moreover, a standardized approach should be recommended irrespective of the sampling location, shipment size or commodity.

General

Fertilizer materials may be sampled for numerous reasons including but not limited to regulatory/legal requirements, commercial/trade, manufacturing, and processing. For regulatory and/or commercial purpose a sampling report should be completed that provides sufficient information detailing the when, where and how such samples were obtained.

The IFA Working Group on the Harmonization of Fertilizer Sampling and Methods of Analysis has developed a set of reporting guidelines for those utilizing the 'Recommended Best Practices' for the sampling of fertilizer materials.

The following guideline is intended to provide the basis for developing a comprehensive report of sampling:

1. A detailed record keeping system should be established

2. The date, time and location of the sampling event

3. The name of the sampler and the department or organization to which he or she belongs

4. The name and description associated with the fertilizer material to be sampled and whether it is in bulk or packaged (specify size of containers, drums, etc.)

5. The overall quantity of the fertilizer material presented (e.g.: declared quantity mt)

6. The sampling standard / procedure referenced

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7. Description of sampling:

- Average sample: one that consists of proportionate parts from all sections of the container.
- Spot sample: a sample taken at a specific location in a tank or from a flowing stream in a pipe at a specific time.
- Composite sample: a blend of spot samples mixed in proportion to the volumes of material from which the spot samples were obtained.
- All-level sample: one obtained by submerging a closed sampler to a point as near as possible to the draw-off level, then opening the sampler and raising it at a rate such that it is about three fourths full as it emerges from the liquid.
- Upper/Middle/Lower sample: individual spot samples taken from the upper third, middle and lower third of the tank.
- Continuous sample: a spot or drip sample obtained from a pipeline conveying the product in such a manner as to give a representative average of the stream throughout the period of transit.
- Tube or thief sample: a spot sample obtained with a sampling tube or thief from a specific point in the container. A tube sampler may be utilized to obtain an all-level sample from a drum.
- Valve/Tap sample: a spot sample obtained from a draw-off or discharge valve.

8. Is the material to be sampled considered homogeneous?

9. Was the material mixed/circulated prior to sampling?

10. The sampling plan adopted, detailing the exact number of sub-lots and/or increments to be taken e.g.: vessel – sample taken from each individual tank

11. Increment mass/volume (liter)

12. Description and detail of sampling apparatus (equipment) utilized e.g.: Stoppered bottle, Zone Sampler, Indiana Sampler, Tube Sampler, etc.

13. Description of sample receptacle e.g.: Glass bottle, Plastic bottle, Metal can

14. All relevant observations made during the sampling procedure, which in the opinion of the sampler may be of importance

15. Photographs of the site, sampling equipment and of the sampling in progress are recommended to be included in the report

16. A written record that includes the accurate and factual reporting of the sampling process

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References

1. IFA Recommendation – Liquid Fertilizer (non-pressurized) Sampling
2. ISO 5306-1983 Fertilizers – Presentation of Sampling Report
3. EN 1482-1:2007 Fertilizer & Liming Materials – Sampling & Sample Preparation
4. ISO 10696 Fluid Fertilizers – Methods of Sampling

Note: The IFA Working Group on the Harmonization of Fertilizer Sampling and Methods of Analysis have published several papers outlining 'Recommended Best Practices' for the sampling of fertilizer materials which may be accessed at the following website: https://www.fertilizer.org/Public/Sustainability/Fertilizer_Production/Public/Sustainability/Fertilizer_Production.aspx#recommandations

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