

GUIDANCE FOR HANDLING NON-CONFORMING AMMONIUM NITRATE BASED FERTILIZERS IN DISTRIBUTION CHAIN (2004)

INTRODUCTION

This **short guidance** is based on the detailed version, Guidance for Safe Handling and Utilization of Non-Conforming Solid Fertilizers and Related Materials for Fertilizer Importers, Distributors and Merchants, issued by Fertilizers Europe (available on www.fertilizerseurope.com website).

It applies to non-conforming fertilizers, in particular those which are based on ammonium nitrate, i.e. they contain nitrogen, N, in both ammoniacal (NH_4^+) and nitrate (NO_3^-) forms and relates to operations in warehouses belonging to importers, distributors and merchants.

Non-conforming material is any product which does not conform to the original specification; it includes off-spec and reject materials.

Reject materials are products, which are out of specification, have deteriorated or become contaminated during storage, handling and/or transport to an extent where they can be considered potentially hazardous. They cannot be sold as fertilizer products anymore and may require treatment to render safe.

GENERAL MEASURES

- Handle and store products in appropriate way to minimise risk of physical breakdown and contamination.
- Do not allow different non-conforming materials to mix; also, keep them separate from conforming fertilizer materials.
- Keep records of products and non-conforming materials.
- Certain inert materials can be used to render safe potentially hazardous materials. Recommended inert materials include: limestone, dolomite, magnesite, clay, gypsum, phosphate rock, sand, calcium sulphate-anhydrite.
- The following materials are **not** generally recommended: mono ammonium phosphate (MAP), di ammonium phosphate (DAP), single super phosphate (SSP), triple super phosphate (TSP).
- In case of dilution with inert materials, a ratio of 1:1 is recommended. Do not allow the treated material to mix with other materials e.g. by storing it in bags.
Options to deal with diluted materials:
 - sell under a new specification,
 - return to supplier, or
 - dispose as a competent disposal company depending on the nature of the original reason for rejection.
- Take care to minimise the quantities of non-conforming, sieved-off and contaminated materials stored.
- If in doubt, contact the producer or importer for expert advice.

SPECIFIC MEASURES

In practice, most non-conforming materials have minor deviations and physical deterioration; they would not be potentially hazardous in nature. Given below are three types of non-conforming materials, which could be generated in typical operations, with indicators of deviations. Remedial measures are listed as alternative options.

PRODUCTS WITH MINOR QUALITY DEFICIENCIES AND WITH-IN LEGAL LIMITS

For example, minor deviations in:

- Particle size
- Nutrient content
- Moisture content
- Flowability (e.g. caking)

Options:

- Separate good product e.g. by screening, and deal with the remainder (fines or oversize) e.g. by blending, dissolving or diluting.
- Sell under a new specification.

PRODUCTS WITH SIGNIFICANT PHYSICAL DETERIORATION (NO CHANGE IN NUTRIENTS)

Examples:

- Substantial amount of dust.
- Considerable weakening of granules/prills.
- Breakdown due to thermal cycling or rough handling.

Precautions:

- Regularly inspect the deteriorated material.
- Do not store it for extended periods e.g. maximum 3 months.

Options: Depending on the extent of deviation, different measures can be taken.

- Sell with new specification, if permissible.
- Sieve-off good product and deal with the remainder e.g. dissolve or dilute.
- Dilute fines/dust or badly deteriorated product with one of the recommended inerts in 1:1 ratio. Sell, return or dispose (see General Measures).

CONTAMINATED MATERIALS

- **With pieces of wood, plastic or rubber**

Options: If possible, remove the contamination and sell the good product. If not possible, dilute with inert material in 1:1 ratio. Dispose using a competent company

- **With oil, grease or sawdust**

Options:

Dilute with inert material in 1:1 ratio and dispose using a competent company. Dissolve in water.

- **With agricultural and/or organic chemicals**

Take quick action, as the mixture can be particularly hazardous.

Keep it separate from all conforming and non-conforming materials

Contact producers or importers for expert advice.

If reaction observed e.g. release of fumes, dilute with plenty of water.

- **Floor sweeping**

Precautions:

Clean up frequently, as dust and contaminated spills can be unsafe. Do **not** use sawdust for cleaning up; use instead ground lava stone, sand, limestone, phosphate rock.

Options:

Dispose using a competent company.

Dilute with an inert material and dispose using a competent company.

- **With other fertilizer materials**

Avoid the mixing of different fertilizer types or with micronutrients so as not to create a hazardous mixture.

Options:

Mix with acceptable fertilizer materials to produce a blend product.

Dilute with an inert material or dissolve.

Company

Logo

FOR FURTHER INFORMATION: