

# STORAGE AND TRANSPORT

## BULK GOODS

- ✓ Secure the unloading opening against the ingress of water and moisture during loading, transport and unloading:
  - do not handle during rain, fog, snow;
  - do not unload from a great height;
  - “cascade” method of putting in storage (belt conveyors) is preferred;
  - handling equipment and conveyor belts must be dry and clean.
- ✓ When handling the front loader, it is necessary to ensure:
  - a clean shovel;
  - prevent crushing of the fertilizer, e.g. by moving the shovel on the ground, spilling the fertilizer and driving over it;
  - do not walk in the fertilizer pile.
- ✓ Damaged fertilizer must be stored separately.



## THE LOADING SURFACE OF THE TRUCK MUST BE

- ✓ clean and free of rust;
- ✓ dry;
- ✓ with sealed covers of inlet openings (ship covers, pouring out windows, etc.);
- ✓ protected against moisture and adverse weather, e.g. with a tarpaulin sheet.

## PACKAGED GOODS

- ✓ In order to maintain the quality of packaged fertilizer, it is necessary to store the fertilizer in undamaged packaging and to observe the following principles to avoid damage to the packaging:
  - protection against direct exposure to sunlight, especially in summer;
  - storing big bags or pallets on a dry floor, preferably inside the warehouse;
  - in case of storage outside the warehouse, it is necessary to cover the goods with a white tarpaulin sheet secured against slipping, there should be air space between the tarpaulin sheet and the bag;
  - the base for external storage must be reinforced;
  - packaged goods can be stacked in compliance with safety rules and handling equipment;
  - the pile should have the shape of a pyramid and should not be higher than the height of 2 rows of big bags or the height of the packaged fertilizer on pallets (max. height 3.5 m);
  - beware of sharp objects and edges when handling;
  - each pallet of bags or each big-bag should be properly marked with a leaflet from the manufacturer;
  - it is necessary to provide additional space for handling equipment;
  - comply with the FIFO (first in – first out) principle, first to the warehouse - first from the warehouse (including correct recording).

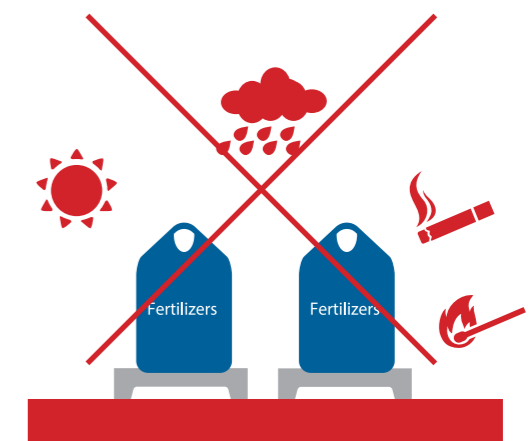
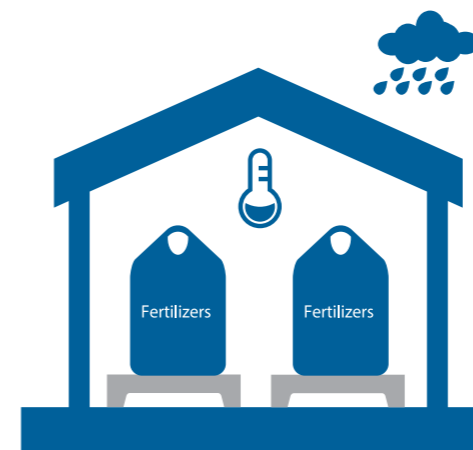
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## INSTRUCTIONS

- FOR PROPER STORAGE AND HANDLING OF GRANULAR FERTILIZERS
- TO MAINTAIN THE QUALITY OF GRANULAR FERTILIZERS

## REQUIREMENTS FOR THE WAREHOUSE, STORAGE AND TRANSPORT

- ✓ The warehouse must comply with the legislative requirements for the storage of fertilizers and their labelling.
- ✓ The warehouse must have an intact roof, intact windows and lockable doors.
- ✓ The warehouse floor, perimeter walls and partition walls must be dry and clean.
- ✓ Any wooden separating barriers and box walls must be covered with PE foil/tarpaulin sheet or impregnated.
- ✓ During storage, there must be no air circulation in the warehouse at high humidity, which can damage the fertilizer.
- ✓ The warehouse can be ventilated, but under strict compliance with the correct climatic conditions.
- ✓ The entrance to the warehouse can only be opened for the time necessary for a vehicle (truck, ..) to enter.
- ✓ The fertilizer must not be mixed with other manufacturers' products and other types of fertilizers.
- ✓ After being put in storage, we recommend covering the fertilizer with an impermeable tarpaulin sheet to ensure maximum protection against contact with moisture during long-term storage.
- ✓ The fertilizer must not be exposed to direct sunlight.
- ✓ The pile of stored fertilizer should not be higher than 5 m and free piles of the same fertilizer must be at least 2 m apart, unless separated by a compartment.
- ✓ We recommend creating several small piles of the fertilizer, not one tall one.
- ✓ The fertilizer must not be in contact with the structural elements of the warehouse (beams, etc.).
- ✓ Do not park handling equipment (vehicles, loaders) in the warehouse.
- ✓ The ban on smoking and handling open flames must be observed in the warehouse.



Proper handling and storage of fertilizers will ensure the stability of their efficiency and quality declared by the manufacturer (granulometry, strength, caking and low dust content).

The quality of the fertilizer is mostly reduced by humidity and temperature changes, which can cause the granules to break down, form dust, caking of the fertilizer and reduce the quality of the application.

External storage is not recommended for nitrate fertilizers of the ammonium oxide type (CAN 27, DASA® 26/13, ENSIN® and DASAMAG®)

# RECOMMENDATIONS

## FOR SAFE STORAGE OF NITRATE - BASED FERTILIZERS

Ammonium nitrate fertilizers are safe, non-toxic and cannot burn or explode spontaneously if handled in accordance with industry guidelines. Nevertheless, fertilizers exposed to heat or fire may decompose and release toxic gases.

- ✓ Always keep a record of what is stored.
- ✓ Storage instructions must be easily accessible.
- ✓ Train workers on safe handling and contingencies.
- ✓ Work according to the FIFO (first in – first out) principle.
- ✓ Use good management practices.
- ✓ In the event of an accident, have free access to aids and escape routes.
- ✓ In the event of maintenance work, it is necessary to obtain the consent of the manager and to observe correct procedures.
- ✓ Use only approved electric tools.
- ✓ Use safety warning signals.
- ✓ Label bags and containers correctly.
- ✓ Carry out security inspections.



- ✗ Comply with the entry ban for unauthorized persons.
- ✗ Do not smoke or use open flame.
- ✗ There should be no gas cylinders, oil drums or fuel stations near the fertilizer.
- ✗ Do not use light sources with glow-lamp filaments, only with a fluorescent light source, avoid contact with the fertilizers.
- ✗ Avoid contact of any heat source with the fertilizers.
- ✗ Do not perform work using heat outside approved and carried out under strict control.
- ✗ Prevent contamination of fertilizers with flammable and organic substances, hay and straw, economic chemicals, oil and fat, acids and bases.
- ✗ Do not use sawdust to dry wet floors, only inert substances.



# RECOMMENDATIONS

## IN CASE OF FIRE OR DECOMPOSITION OF FERTILIZERS

- ✓ Inform fire fighters, inform them about the character of the substances.
- ✓ Evacuate the operator.
- ✓ Open windows, doors and ventilation openings to ensure max. ventilation.
- ✓ Find the source of the fire and try to control it if it is safe to do so.
- ✓ Extinguish the fire from the direction against the wind, avoid inhalation of smoke, use a breathing apparatus if necessary.
- ✓ If possible, remove decomposing fertilizers and spray them with water.
- ✓ If decomposing fertilizers cannot be removed, use specialized equipment and large amounts of water to stop decomposition.
- ✓ Prevent leakage of molten fertilizers or contaminated water into sewers.
- ✓ Inform the competent authorities if there is a risk of water pollution.
- ✓ Make sure that the fire or decomposition does not start again. If necessary, arrange patrol for the necessary time and then clean the area.
- ✓ Dispose of damaged fertilizers in a safe way (according to industry guidelines)
- ✓ Ensure that damaged fertilizers do not pollute the environment (no discharge into watercourses or groundwater).



### FIRST AID IN CASE OF FIRE OR DECOMPOSITION

- ✓ Evacuate people exposed to smoke to a safe place, store them in the shade and keep warm.
- ✓ Call for medical help - inform the physician and provide him with the safety data sheet.
- ✓ In case of breathing disorders, start mouth-to-mouth breathing (do not squeeze the chest) or use oxygen (trained staff)
- ✓ Continue medical observation for at least 48 hours.

- ✗ Do not use chemical fire extinguishers, foam, steam or sand for decomposing fertilizers.

