

The cover features a large dark blue triangle on the left containing the title. To its left is a vertical strip showing a close-up of light-colored, spherical fertilizer granules, some with orange markings. To the right of the blue triangle is a photograph of a green tractor with a red implement working in a brown field, with a line of bare trees in the background under a blue sky. A pink triangle is on the far right.

# Safety and security practices for nitrogen fertilizers

At OCI Agro, we take safety and security of our fertilizers very seriously. This means that our fertilizers – as well as their ingredients and any additives and intermediate products – are manufactured, treated, stored, distributed and used according to strict health, safety, security and environmental standards. Our aim is to provide relevant information and advice about using and storing our fertilizers safely and securely.

This leaflet offers you and your customers information on safe and secure storage.

At OCI Agro, we distinguish between safety and security. Safety refers to the product itself, for example how best to handle, store and blend ammonium nitrate-based fertilizers. Security refers to precautions taken in relation with terrorism.

### **Safety of ammonium nitrate-based (AN) fertilizers**

Ammonium nitrate-based fertilizers such as CAN are safe if you follow the guidelines below. They are not toxic and will not burn, ignite or explode spontaneously. However, exposure to heat or flames can cause them to decompose and produce toxic fumes.

### **Guidelines for safe use and storage**

- Nutramon-CAN will not burn, but nitrate-based products can intensify a fire. Fertilizers should always be kept away from combustible, organic material (e.g. oil, grease, sawdust, grain and hay), building materials, and so on.
- Avoid contact between the product and acids, for example hydrochloric or sulfuric acid.
- Do not mix with other fertilizers. Dissolve spillage or “non-compliant product” in water.

- Avoid contamination of Nutramon-CAN, as this could alter its properties and make the product hazardous. Always store different fertilizers in separate, well-spaced containers.

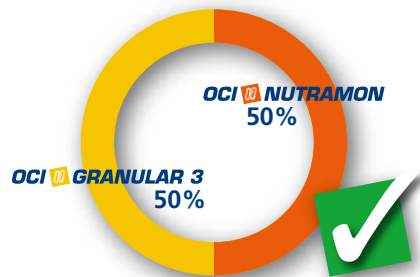


- In the event of fire, the product may release toxic fumes. Extinguish the fire with large amounts of water. Do not use any other extinguishing media. Do not allow water from the extinguisher to run off into the groundwater or surface water.
- Avoid all contact between the product and heat sources, for example lamps or the heat-generating components of conveyancing equipment (check conveyor belt rolls regularly and especially greased parts).
- No smoking or open flames in storage areas.
- Before starting maintenance work on installations, make sure that all fertilizers are removed (rinse regularly). This includes confined spaces.

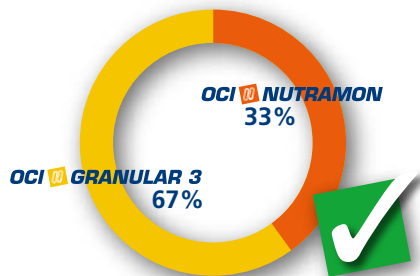


## Blending

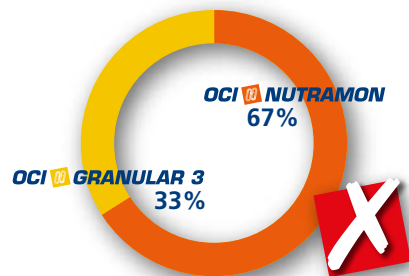
OCI Agro's Nutramon and Granular 3 are high-quality ingredients suitable for blending. Their even particle size distribution produces homogeneous blends with good spreading properties. Before blending, however, be sure to look closely at their safety characteristics, since blending can alter them. Two non-UN-classified fertilizers in a blend can end up as an UN-classified fertilizer. Almost all blends that combine Nutramon-CAN and ASN (ammonium sulfate nitrate) are UN-classified. We do not recommend to blend these fertilizers.



A common blend is 50% Nutramon + 50% Granular 3. This is a safe blend.



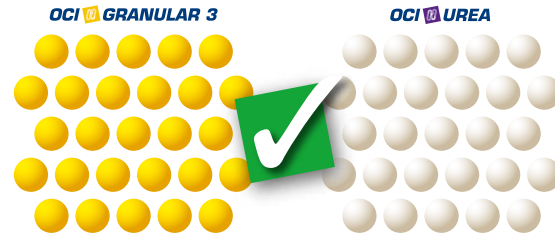
67% Granular 3 + 33% Nutramon = safe. As long as the blend contains at least 42% Granular 3.



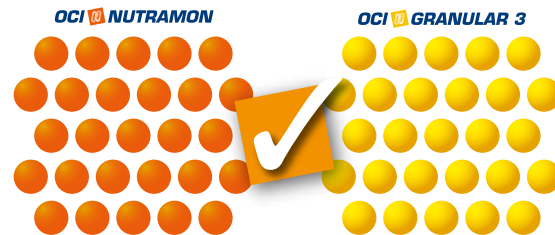
A blend consisting of 67% Nutramon + 33% Granular 3 = UN-classified.

## Safety criteria and compatibility (chemical and physical) in blending

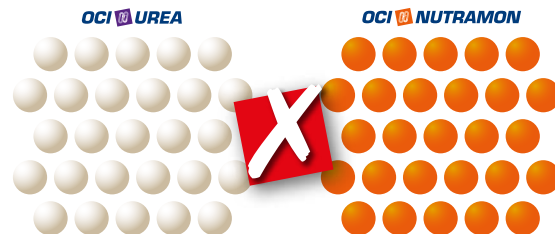
Compatibility primarily relates to blending of different fertilizers, cross contamination and other problems in safety and / or quality; e.g. caking, weakening, dust formation, and loss of resistance to thermal cycling in the case of ammonium nitrate.



Granular 3 + Urea = **compatible**



Nutramon + Granular 3 = **limited compatible\***



Urea + Nutramon = **incompatible\*\***

\* Consider the safety implications regarding the detonability of the blend (AN / AS mixtures) and legislative implications.

\*\* Mixture will quickly become wet and absorb moisture resulting in the formation of liquid or slurry. There could also be safety implications.





## Bulk storage risks

Fertilizers are often stored in bulk. In many cases, the storage location is purpose-built for bulk fertilizers. In other cases, the location has been adapted for bulk storage, with concrete blocks used as a building material.

- If you plan to use concrete blocks to build a bulk storage area, have an expert do the calculations. National guidelines have been established for this purpose.



- Avoid steep piles of compacted or hardened material, as this can lead to hazardous situations.
- Use an attachment on your mechanical shovel long enough to loosen the material.
- Do not park mechanical shovels in or near the storage location. You should also not fill fuel tanks in the storage location.
- If the fertilizer is exposed to high temperatures (e.g. fire) or reacts with acids or alkaline, it will release toxic fumes. Avoid inhaling these fumes and see that the area is well-ventilated. In case of fire, alert the fire service and extinguish with large amounts of water.

## Security

Nitrate-based fertilizers are not always used for the right reasons, unfortunately. Sometimes, they are used for criminal purposes. Terrorists may use these products to produce explosives. Please be aware of this and remain vigilant:

1. Only supply fertilizer to customers that you know, or if you can verify that the customer is authorized to purchase the product. Be sure to record all transactions.
2. Alert the police in the event of a suspicious transaction, if you observe irregularities during purchase, sale, transfer or storage, or in the case of theft.
3. No one should be able to access the fertilizers without authorization. Make sure that the fertilizer storage location is locked outside opening hours. Do not store fertilizers where they can be easily spotted.



4. Keep a logbook of suspicious transactions and incidents.
5. Take frequent stock inventories and check regularly for attempted break-ins, theft or vandalism.



## Master the art of safety

The art of safety is of the utmost importance when dealing with fertilizers. If you master the art of safety, you'll satisfy many of the product quality, safety and security criteria for nitrate-based and all other fertilizers.



*Keep doors closed*



*Keep floor clean and dry*



*Avoid overloading mechanical shovel, prevent spills*



*Don't drive through fertilizer*



*Move discharge point regularly to prevent segregation*



*Cover fertilizer immediately to prevent it from absorbing moisture*



OCI Agro has been manufacturing high-quality nitrogen fertilizers for more than 80 years. Our products comply with European Union rules for fertilizers and with the following:

Security regulations						
EU : REGULATION (EU) No 98/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 January 2013, on the marketing and use of explosives precursors						
Storage regulations						
B : Decree C2006/36000, May 12, 2006, amending VLAREM [Flemish Regulation on Environmental Permits], Classification Heading 17.2						
Decree 2004/29086, February 4, 2004, amending the list of classified facilities, Heading 63.12.20						
D : Hazardous Substance Ordinance und TRGS [Technical Rules for Hazardous Substances] 511, 'Ammonium nitrate'						
F : Decree n° 2014-285, of March 3, 2014						
IRL : S.I. no. 74, 2006, European Communities (Control Major Accident Hazards Involving Dangerous Substances) Regulations 2006						
NL : Storage of Solid Mineral Inorganic Fertilizers, PGS7						
S : CEE Rule 2003/2003 dated 13.10.2003						
UK : Control of Major Accident Hazards (Amendment) Regulations 2005						
Specific classification						
Product	% N	% AN-N	% AN	F	D	NL
Nutramon	27	27	77,1	Heading 4702-III	Group C I	Group 1.2
Granular 3	21	0	0,0	nc	-	Group 1.1
Granular 2	21	0	0,0	nc	-	Group 1.1
AS Crystal	21	0	0,0	nc	-	Group 1.1
Urea	46	0	0,0	nc	-	Group 1.1
UAN	30	15	42,9	Heading 2175	Group D I	Group 1.2

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Emergency phone no.:

**OCI ALERT CENTRE**

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(available day and night)

*This information is brought to you by your supplier of quality fertilizers.*

