

**SAFETY DATA SHEET**

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

**SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product identifier**

Product name : SOLUSTAR N

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Use for agriculture (nutrients/ trace elements for plants)

**1.3. Details of the supplier of the safety data sheet**

Registered company name : AGRO-NUTRITION SAS.

Address : Parc Activestre - 3 avenue de l'Orchidee.31390.CARBONNE.FRANCE.

Telephone : 33 (0) 5 61 97 85 00. Fax : 33 (0) 5 61 97 85 01.

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<http://www.agronutrition.com>**1.4. Emergency telephone number : +33 (0)1 45 42 59 59.**Association/Organisation : INRS / ORFILA <http://www.centres-antipoison.net>.**>SECTION 2 : HAZARDS IDENTIFICATION****2.1. Classification of the substance or mixture****In compliance with EC regulation No. 1272/2008 and its amendments.**

Skin corrosion, Category 1A (Skin Corr. 1A, H314).

Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

**2.2. Label elements****> In compliance with EC regulation No. 1272/2008 and its amendments.**

Hazard pictograms :



GHS05



GHS09

Signal Word :

DANGER

Product identifiers :

015-011-00-6

PHOSPHORIC ACID

Hazard statements :

H314

Causes severe skin burns and eye damage.

H411

Toxic to aquatic life with long lasting effects.

Precautionary statements - General :

P102

Keep out of reach of children.

Precautionary statements - Prevention :

P280

Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - Response :

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/...

Precautionary statements - Disposal :

P501 Dispose of contents/ container to an approved waste disposal plant.

Other information :

**2.3. Other hazards**

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC)  $\geq 0.1\%$  published by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

**>SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS****3.2. Mixtures****> Composition :**

Identification	(EC) 1272/2008	Note	%
INDEX: 015-011-00-6 CAS: 7664-38-2 EC: 231-633-2 REACH: 01-21119485924-24-0021  PHOSPHORIC ACID	GHS05 Dgr Skin Corr. 1B, H314	B [1]	25 $\leq$ x % < 50
INDEX: 040 CAS: 6484-52-2  NITRATE D'AMMONIUM	GHS07, GHS03 Wng Ox. Sol. 3, H272 Eye Irrit. 2, H319		10 $\leq$ x % < 25
INDEX: 014 CAS: 7779-88-6 EC: 231-943-8 REACH: 05-2117368463-38-xxxx  ZINC(II) NITRATE	GHS07, GHS09, GHS03 Dgr Ox. Liq. 2, H272 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400 M Acute = 1 Aquatic Chronic 1, H410 M Chronic = 1		10 $\leq$ x % < 25

**Information on ingredients :**

[1] Substance for which maximum workplace exposure limits are available.

**SECTION 4 : FIRST AID MEASURES**

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

**4.1. Description of first aid measures****In the event of exposure by inhalation :**

Remove the victim to fresh air. In case of respiratory problems, consult a doctor/medical service.

**In the event of splashes or contact with eyes :**

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.

**In the event of splashes or contact with skin :**

Remove any soiled or splashed clothing immediately.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

**In the event of swallowing :**

Do not give the patient anything orally.

Seek medical attention immediately, showing the label.

**4.2. Most important symptoms and effects, both acute and delayed**

Symptoms/lesions after inhalation: cough, respiratory tract irritation.

Symptoms/lesions after skin contact: skin irritation, redness.

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Symptoms/lesions after eye contact: corrosion, irritation of the eye tissues.

Symptoms/lesions after ingestion: abdominal pain, nausea.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Specific and immediate treatment :**

Eye bathing the scene.

**SECTION 5 : FIREFIGHTING MEASURES**

Non-flammable.

**5.1. Extinguishing media**

**Suitable methods of extinction**

In the event of a fire, use :

- sprayed water or water mist
- foam
- powder
- carbon dioxide (CO<sub>2</sub>)

The choice of the method depends on the other products present.

Do not use a strong water jet, danger of spreading of the product.

**5.2. Special hazards arising from the substance or mixture**

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- nitrogen oxide (NO)
- nitrogen dioxide (NO<sub>2</sub>)

**5.3. Advice for firefighters**

No data available.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES**

**6.1. Personal precautions, protective equipment and emergency procedures**

Consult the safety measures listed under headings 7 and 8.

**For non first aid worker**

Avoid any contact with the skin and eyes.

If spill is large, evacuate all personnel and only allow intervention by trained operators and equipped with individual protection equipment appropriate (refer to Section 8).

**For first aid worker**

First aid workers will be equipped with suitable personal protective equipment (See section 8).

**6.2. Environmental precautions**

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

**6.3. Methods and material for containment and cleaning up**

Neutralise with an alkaline decontaminant, such as an aqueous solution of sodium carbonate or similar.

If the ground is contaminated, once the product has been recovered by sponging with an inert and non-combustible absorbent material, wash the contaminated area in plenty of water.

Clean preferably with a detergent, do not use solvents.

**6.4. Reference to other sections**

See section 1 for information about emergency contact.

See section 13 for obtain additional information on waste treatment.

See section 8 for information on personal protection equipments.

**SECTION 7 : HANDLING AND STORAGE**

Requirements relating to storage premises apply to all facilities where the mixture is handled.

**7.1. Precautions for safe handling**

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Emergency showers and eye wash stations will be required in facilities where the mixture is handled constantly.

**SOLUSTAR N****Fire prevention :**

Prevent access by unauthorised personnel.

**Recommended equipment and procedures :**

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

**Prohibited equipment and procedures :**

No smoking, eating or drinking in areas where the mixture is used.

**7.2. Conditions for safe storage, including any incompatibilities**

No data available.

**Storage**

Keep out of reach of children.

Keep away from food, drink and animal feedingstuffs.

Storage temperature: 0-35°C

**Packaging**

Always keep in packaging made of an identical material to the original.

Replace the label in case of split of packaging.

**7.3. Specific end use(s)**

No data available.

**>SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters****Occupational exposure limits :**

- European Union (2009/161/EU, 2006/15/EC, 2000/39/EC, 98/24/EC)

CAS	VME-mg/m3	VME-ppm	VLE-mg/m3	VLE-ppm	Notes
7664-38-2	1	-	2	-	-

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
7664-38-2	1 mg/m3	3 mg/m3	-	-	-

- France (INRS - ED984 :2008) :

CAS	VME-ppm	VME-mg/m3	VLE-ppm	VLE-mg/m3	Notes	TMP No :
7664-38-2	0.2	1	0.5	2	-	-

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
7664-38-2	1 mg/m3	2 mg/m3	-	-	-

**8.2. Exposure controls****Personal protection measures, such as personal protective equipment**

Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

**- Eye / face protection**

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

In the event of high danger, protect the face with a face shield.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

**- Hand protection**

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Natural latex

- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

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- PVC (polyvinyl chloride)
  - Butyl Rubber (Isobutylene-isoprene copolymer)
- Recommended properties :
- Impervious gloves in accordance with standard EN374

**> - Body protection**

- Avoid skin contact.  
Wear suitable protective clothing.  
Suitable type of protective clothing :  
In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605 to prevent skin contact.  
In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.  
Wear suitable protective clothing, in particular overalls and boots. These items must be kept in good condition and cleaned after use.  
Work clothing worn by personnel shall be laundered regularly.  
After contact with the product, all parts of the body that have been soiled must be washed.

**- Respiratory protection**

- Type of FFP mask :  
Wear a disposable half-mask aerosol filter in accordance with standard EN149.  
Category :  
- FFP2  
If the setting covers the product and its application (spray atomization) is generating aerosol or fine particles liquids, it is recommended to wear a respirator, properly fitted.

**Exposure controls linked to environmental protection**

- Do not discharge into drains, surface waters or soil. Recover accidentally quantities of common ground products. Remove waste in accordance with local and national regulations.

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on basic physical and chemical properties****General information :**

Physical state :	Fluid liquid.
Color	colorless to yellow translucent
Odor	Odourless
State	Soluble concentrate (SL)

**Important health, safety and environmental information**

pH (aqueous solution) :	1.90 +/-0.6 (10g/l)
pH :	1.00 +/-0.6. Strongly acidic.
Boiling point/boiling range :	Not relevant.
Flash point interval :	Not relevant.
Vapour pressure (50°C) :	Not relevant.
Density :	1450 (+/-1.5%) g/dm <sup>3</sup>
Water solubility :	Soluble.
Melting point/melting range :	Not relevant.
Self-ignition temperature :	Not relevant.
Decomposition point/decomposition range :	Not relevant.

**9.2. Other information**

No data available.

**SECTION 10 : STABILITY AND REACTIVITY****10.1. Reactivity**

No data available.

**10.2. Chemical stability**

This mixture is stable under the recommended handling and storage conditions in section 7.

**10.3. Possibility of hazardous reactions**

According to our knowledge, this product does not present any particular hazard under normal conditions of use and storage.

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**10.4. Conditions to avoid**

- Avoid :  
- frost  
- heat

**10.5. Incompatible materials**

- Keep away from :  
- strong acids  
- strong oxidising agents  
- strong bases

**10.6. Hazardous decomposition products**

- The thermal decomposition may release/form :  
- nitrogen oxide (NO)  
- nitrogen dioxide (NO<sub>2</sub>)

**SECTION 11 : TOXICOLOGICAL INFORMATION**

**11.1. Information on toxicological effects**

May cause irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following exposure for up to three minutes.

Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discolouration due to blanching of the skin, complete areas of alopecia, and scars.

**11.1.1. Substances**

**Acute toxicity :**

NITRATE D'AMMONIUM (CAS: 6484-52-2)

Oral route : LD50 = 2950 mg/kg  
Species : Rat

Dermal route : LD50 = 5000 mg/kg  
Species : Rat

**11.1.2. Mixture**

**Acute toxicity :**

No data on the product itself is available.

**Skin corrosion/skin irritation :**

Corrosive classification is based on an extreme pH value.

Can cause severe burns due to its strong acid pH

**Serious damage to eyes/eye irritation :**

Corrosive classification is based on an extreme pH value.

The severity depends on the concentration and exposure time

Intense irritant, may cause burns

**Respiratory or skin sensitisation :**

N/A

**Germ cell mutagenicity :**

No evidence of this effect was found.

**Carcinogenicity :**

No evidence of this effect was found

**Reproductive toxicant :**

No evidence of this effect was found.

**SECTION 12 : ECOLOGICAL INFORMATION**

Toxic to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

The mineral elements ( nutrients) contained in this product are essential for healthy plant growth, but may be harmful in large quantities to wildlife, aquatic organisms or sensitive plants. It is therefore necessary to minimize the amount of product released into the environment, except as part a rational fertilization program for the plants, preferably after a test for soil and/or plant issues.

**SOLUSTAR N****12.1. Toxicity****12.1.1. Substances**

NITRATE D'AMMONIUM (CAS: 6484-52-2)

Fish toxicity :

LC50 = 447 mg/l

Duration of exposure : 48 h

Crustacean toxicity :

EC50 = 490 mg/l

Species : Daphnia magna

Duration of exposure : 48 h

**12.1.2. Mixtures**

No aquatic toxicity data available for the mixture.

**12.2. Persistence and degradability****12.2.1. Substances**

NITRATE D'AMMONIUM (CAS: 6484-52-2)

Biodegradability :

no degradability data is available, the substance is considered as not degrading quickly.

**12.2.2. Mixtures**

This product is very soluble in water and is dangerous to the aquatic environment in the long term. We must therefore ensure that any flow is not driven into the aquatic environment or in any sewer or drain. When using, avoid spreading of the product in the cultivated areas (hedges, borders, ditches, streams).

**12.3. Bioaccumulative potential**

No data available.

**12.4. Mobility in soil**

No data available.

**12.5. Results of PBT and vPvB assessment**

No data available.

**12.6. Other adverse effects**

At high concentrations in water, adverse effects due to pH can be observed on aquatic life. Ensure that all flow is not driven into the aquatic environment or in any égotout or drain. When using, do not spill the product beyond the acreage (hedges, edges, ditches, streams).

**SECTION 13 : DISPOSAL CONSIDERATIONS**

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

**13.1. Waste treatment methods**

Do not pour into drains or waterways.

**Waste :**

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

**Soiled packaging :**

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

**Local arrangements :**

submit to an approved disposal.

**>SECTION 14 : TRANSPORT INFORMATION**

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2015 - IMDG 2014 - ICAO/IATA 2015).

**14.1. UN number**

3264

**> 14.2. UN proper shipping name**

UN3264=CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

(phosphoric acid ...%, zinc(ii) nitrate)

**SOLUSTAR N****14.3. Transport hazard class(es)**

- Classification :



8

**14.4. Packing group**

III

**14.5. Environmental hazards**

- Environmentally hazardous material :

**14.6. Special precautions for user**

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	8	C1	III	8	80	5 L	274	E1	3	E

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ
	8	-	III	5 L	F-A,S-B	223 274	E1

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	8	-	III	852	5 L	856	60 L	A3 A803	E1
	8	-	III	Y841	1 L	-	-	A3 A803	E1

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

No data available.

**>SECTION 15 : REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****> - Classification and labelling information included in section 2:**

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 487/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 944/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 605/2014.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 1297/2014.

**- Container information:**

No data available.

**- Particular provisions :**

No data available.

**15.2. Chemical safety assessment**

No data available.

**>SECTION 16 : OTHER INFORMATION**

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

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The information contained in this MSDS was obtained from sources which we believe are reliable and corresponds to the current state of our knowledge and experience of the product and is not exhaustive. This applies to product which conforms to the specifications, unless otherwise stated. In case of formulations or mixtures, make sure that no new dangers can not be produced.

The product should not be used for other purposes than those specified under section 1. Attention of users is drawn to the possible risks incurred when a product is used for purposes other than those for which it was designed, without the prior written handling instructions.

This complements the technical sheets but does not replace plug. Is not exempt under any circumstances, the product user to comply with all laws, regulations and procedures relating to the product, safety, hygiene and protection human health and the environment.

Monitoring of changes in the MSDS

review in the light of Regulation CLP (CE) 1272/2008

**> Wording of the phrases mentioned in section 3 :**

H272	May intensify fire; oxidiser.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**> Abbreviations :**

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).

GHS05 : Corrosion

GHS09 : Environment

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.