



SAFETY DATA SHEET CALCIUM NITRATE SOLUTION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name CALCIUM NITRATE SOLUTION

Product number 11135

Synonyms; trade names YARANUTRIOX CN 45

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

Identified uses Industrial application Chemical Intermediate

1.3. Details of the supplier of the safety data sheet

Supplier Univar
 Aquarius House
 6 Mid Point Business Park
 Bradford
 BD3 7AY
 +44 1274 267300
 +44 1274 267306
 sds@univar.com

1.4. Emergency telephone number

Emergency telephone SGS - +32 (0)3 575 55 55 (24h)

Sds No. 11135

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 Eye Dam. 1 - H318

Environmental hazards Not Classified

2.2. Label elements

Pictogram



Signal word Danger

Hazard statements H302 Harmful if swallowed.
 H318 Causes serious eye damage.

CALCIUM NITRATE SOLUTION

Precautionary statements	P264 Wash contaminated skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. 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. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P501 Dispose of contents/ container in accordance with national regulations.
---------------------------------	--

Contains	CALCIUM NITRATE
-----------------	-----------------

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

CALCIUM NITRATE	>=45-<50%
CAS number: 10124-37-5	EC number: 233-332-1
Classification Ox. Liq. 2 - H272 Acute Tox. 4 - H302 Eye Dam. 1 - H318	

The full text for all hazard statements is displayed in Section 16.

Composition comments	The data shown are in accordance with the latest EC Directives.
-----------------------------	---

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove affected person from source of contamination. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Give plenty of water to drink. Get medical attention.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.
Eye contact	Remove any contact lenses and open eyelids wide apart. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

Ingestion	Harmful if swallowed. May cause burns in mucous membranes, throat, oesophagus and stomach.
Eye contact	Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated.

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

Notes for the doctor	Treat symptomatically.
-----------------------------	------------------------

SECTION 5: Firefighting measures

5.1. Extinguishing media

CALCIUM NITRATE SOLUTION

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently when heated, due to excess pressure build-up.

Hazardous combustion products When heated, vapours/gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Follow precautions for safe handling described in this safety data sheet. Do not touch or walk into spilled material. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions Avoid discharge into water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

Advice on general occupational hygiene Provide eyewash station and safety shower. Do not eat, drink or smoke when using this product. Wash after use and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Protect against direct sunlight. Keep away from food and drink. Avoid contact with the following materials: Alkalis. Acids. Reducing agents. Organic materials. Keep away from combustible material.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Ingredient comments No exposure limits known for ingredient(s).

CALCIUM NITRATE SOLUTION

CALCIUM NITRATE (CAS: 10124-37-5)

DNEL	Workers - Dermal; Long term systemic effects: 13.9 mg/kg/day Workers - Inhalation; Long term systemic effects: 24.5 mg/m ³
PNEC	- Fresh water; 0.45 mg/l - Marine water; 0.045 mg/l - STP; 18 mg/l Intermittent release; 4.5 mg/l

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Provide eyewash station and safety shower.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Wear chemical splash goggles. EN 166

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. It is recommended that gloves are made of the following material: Nitrile rubber. Neoprene. Rubber (natural, latex). (>0.35mm coating thickness) The selected gloves should have a breakthrough time of at least 8 hours. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

Hygiene measures

Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. EN 136/140/141/145/143/149

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Odourless.
pH	pH (diluted solution): 5-7 @ 140g/l
Melting point	-20- -15°C
Initial boiling point and range	115°C
Upper/lower flammability or explosive limits	No information available.
Vapour pressure	17 hPa @ 20°C

CALCIUM NITRATE SOLUTION

Vapour density	No information available.
Relative density	1.4
Solubility(ies)	Soluble in water.
Partition coefficient	: <1
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	6.5 mPa s @ 20°C
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	Not determined.
-------------------	-----------------

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No test data specifically related to reactivity available for this product or its ingredients.
------------	--

10.2. Chemical stability

Stability	Stable at normal ambient temperatures.
-----------	--

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Under normal conditions of storage and use, no hazardous reactions will occur.
------------------------------------	--

10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time.
---------------------	---

10.5. Incompatible materials

Materials to avoid	Alkalis. Reducing agents. Acids. Organic compounds.
--------------------	---

10.6. Hazardous decomposition products

Hazardous decomposition products	When heated, vapours/gases hazardous to health may be formed.
----------------------------------	---

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg)	1,111.11
------------------	----------

Skin corrosion/irritation

Animal data	No information available.
-------------	---------------------------

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage.
-------------------------------	----------------------------

Respiratory sensitisation

Respiratory sensitisation	Not sensitising.
---------------------------	------------------

Skin sensitisation

Skin sensitisation	Not sensitising.
--------------------	------------------

CALCIUM NITRATE SOLUTION

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard No information available.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion Harmful if swallowed. May cause burns in mucous membranes, throat, oesophagus and stomach.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact Causes serious eye damage.

Toxicological information on ingredients.

CALCIUM NITRATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 423.0

Species Rat

ATE oral (mg/kg) 423.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2000 mg/kg, Dermal, Rat

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage. Rabbit OECD 405

Respiratory sensitisation

Respiratory sensitisation Not sensitising.

Skin sensitisation

Skin sensitisation Not sensitising.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

SECTION 12: Ecological Information

CALCIUM NITRATE SOLUTION

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.1. Toxicity

Acute aquatic toxicity

Acute toxicity - fish No information available.

Ecological information on ingredients.

CALCIUM NITRATE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 1378 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 490 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 10 days: 1700 mg/l, Algae

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient : <1

12.4. Mobility in soil

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment Not applicable.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

CALCIUM NITRATE SOLUTION

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

15.2. Chemical safety assessment

No information available.

SECTION 16: Other information

CALCIUM NITRATE SOLUTION

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Revision date	02/03/2018
Version number	1.003
Supersedes date	21/09/2016
SDS number	11135
SDS status	Approved.

CALCIUM NITRATE SOLUTION

Hazard statements in full

H272 May intensify fire; oxidiser.

H302 Harmful if swallowed.

H318 Causes serious eye damage.

Signature

K Winter