

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Calcium nitrate tetrahydrate for analysis, ACS

Revision date: 13.07.2023

Product code: 22677

Page 1 of 10

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

### 1.1. Product identifier

Calcium nitrate tetrahydrate for analysis, ACS

REACH Registration Number: 01-2119495093-35-XXXX  
CAS No: 13477-34-4  
EC No: 233-332-1

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

#### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

Company name: AnalytiChem GmbH  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
E-mail: info@analytichem.de  
Contact person: Abteilung Produktsicherheit  
E-mail: produktsicherheit@analytichem.de  
Internet: www.analytichem.de  
Responsible Department: Abteilung Produktsicherheit  
Telefax: 0203/5194-290  
Telephone: 0203/5194-107/117

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

No data available

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Ox. Sol. 3; H272  
Acute Tox. 4; H302  
Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:



#### Hazard statements

H272 May intensify fire; oxidiser.  
H302 Harmful if swallowed.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Calcium nitrate tetrahydrate for analysis, ACS**

Revision date: 13.07.2023

Product code: 22677

Page 2 of 10

H318 Causes serious eye damage.

**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P220 Keep away from clothing and other combustible materials.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing 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.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

Sum formula: Ca(NO<sub>3</sub>)<sub>2</sub> \* 4 H<sub>2</sub>O  
 Molecular weight: 236,15 g/mol

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
13477-34-4	Calcium nitrate tetrahydrate			100 %
	233-332-1		01-2119495093-35-	
	Ox. Sol. 3, Acute Tox. 4, Eye Dam. 1; H272 H302 H318			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
13477-34-4	233-332-1	Calcium nitrate tetrahydrate	100 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 300 - < 2000 mg/kg		

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

No data available

**After inhalation**

Provide fresh air.  
 Call a doctor if you feel unwell.

**After contact with skin**

Wash immediately with: Water  
 Take off immediately all contaminated clothing and wash it before reuse.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.  
 Remove contact lenses, if present and easy to do. Continue rinsing.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Calcium nitrate tetrahydrate for analysis, ACS

Revision date: 13.07.2023

Product code: 22677

Page 3 of 10

#### After ingestion

Rinse mouth immediately and drink plenty of water.  
Call a physician immediately.

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

Gastrointestinal complaints  
Irritant  
Risk of serious damage to eyes.  
Methaemoglobinaemia

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

No data available

### SECTION 5: Firefighting measures

#### **5.1. Extinguishing media**

##### **Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

##### **Unsuitable extinguishing media**

no restriction

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

Non-combustible solids  
Oxidizing  
Hazardous combustion products  
In case of fire may be liberated:  
Nitrogen oxides (NO<sub>x</sub>)

#### **5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.  
In case of fire and/or explosion do not breathe fumes.  
Avoid contact with skin, eyes and clothes.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Move undamaged containers from immediate hazard area if it can be done safely.  
Use water spray jet to protect personnel and to cool endangered containers.

### SECTION 6: Accidental release measures

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

##### **For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Do not breathe dust/fume/gas/mist/vapours/spray.

##### **For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

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

##### **For containment**

Cover drains.  
Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Calcium nitrate tetrahydrate for analysis, ACS**

Revision date: 13.07.2023

Product code: 22677

Page 4 of 10

Take up carefully when dry. Take up dust-free and set down dust-free.

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Read label before use.

Handle and open container with care.

Provide adequate ventilation.

Avoid contact with skin, eyes and clothes.

Avoid dust formation. Do not breathe dust.

**Advice on protection against fire and explosion**

Material, oxygen-rich, Oxidising

**Advice on general occupational hygiene**

Take off contaminated clothing.

Wash hands before breaks and after work.

When using do not eat or drink.

**Further information on handling**

Take off contaminated clothing and wash it before reuse.

Wash hands before breaks and after work.

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

**Requirements for storage rooms and vessels**

Keep container tightly closed and dry.

**Hints on joint storage**

Keep away from: Combustible substance

**Further information on storage conditions**

storage temperature +5°C - +30°C.

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

Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**DNEL/DMEL values**

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
13477-34-4	Calcium nitrate tetrahydrate		
Consumer DNEL, acute	oral	systemic	10 mg/kg bw/day

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Calcium nitrate tetrahydrate for analysis, ACS

Revision date: 13.07.2023

Product code: 22677

Page 5 of 10

**PNEC values**

CAS No	Substance	Value
Environmental compartment		
13477-34-4	Calcium nitrate tetrahydrate	
Micro-organisms in sewage treatment plants (STP)		18 mg/l

**8.2. Exposure controls****Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear eye/face protection.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

**Skin protection**

Wear suitable protective clothing. Take off immediately all contaminated clothing.  
Wash hands before breaks and after work.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.  
Filtering device with filter or ventilator filtering device of type: P2

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state: solid

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Calcium nitrate tetrahydrate for analysis, ACS**

Revision date: 13.07.2023

Product code: 22677

Page 6 of 10

Colour:	colourless
Odour:	odourless
Odour threshold:	not determined
Melting point/freezing point:	45 °C
Boiling point or initial boiling point and boiling range:	not determined
Flammability:	not determined
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	X
Auto-ignition temperature:	not determined
Decomposition temperature:	561 °C
pH-Value (at 25 °C):	5,0-7,0 (50 g/l)
Viscosity / kinematic:	not determined
Water solubility: (at 40 °C)	2710 g/L
Solubility in other solvents	not determined
Dissolution rate:	not determined
Partition coefficient n-octanol/water:	not determined
Dispersion stability:	not determined
Vapour pressure:	not determined
Vapour pressure:	not determined
Density:	1,82 g/cm <sup>3</sup>
Relative density:	not determined
Bulk density:	1000 kg/m <sup>3</sup>
Relative vapour density:	not determined

**9.2. Other information**

**Information with regard to physical hazard classes**

Explosive properties	not determined
Sustaining combustion:	No data available
Self-ignition temperature	
Solid:	not determined
Gas:	not applicable
Oxidizing properties	oxidising

**Other safety characteristics**

Evaporation rate:	not determined
Solvent separation test:	not determined
Solvent content:	not determined
Solid content:	100%
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
not determined:	
Viscosity / dynamic:	not determined
Flow time:	not determined

**Further Information**

not determined

**SECTION 10: Stability and reactivity**

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Calcium nitrate tetrahydrate for analysis, ACS**

Revision date: 13.07.2023

Product code: 22677

Page 7 of 10

**10.1. Reactivity**

Oxidizing

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Combustible substance  
Metal powder  
Ammonium nitrate  
Reducing agent

**10.4. Conditions to avoid**

No data available

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

In case of fire may be liberated:  
SECTION 5: Firefighting measures

**Further information**

No data available

**SECTION 11: Toxicological information**

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Toxicokinetics, metabolism and distribution**

No data available

**Acute toxicity**

Harmful if swallowed.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
13477-34-4	Calcium nitrate tetrahydrate				
	oral	LD50 > 300 - < 2000 mg/kg	Rat	Study report (2010)	OECD Guideline 423
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2007)	OECD Guideline 402

**Irritation and corrosivity**

Causes serious eye damage.  
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

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

**STOT-single exposure**

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

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**Specific effects in experiment on an animal**

No data available

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Calcium nitrate tetrahydrate for analysis, ACS**

Revision date: 13.07.2023

Product code: 22677

Page 8 of 10

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

**Further information**

Gastrointestinal complaints

Irritant

Risk of serious damage to eyes.

Methaemoglobinaemia

**SECTION 12: Ecological information**

**12.1. Toxicity**

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

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
13477-34-4	Calcium nitrate tetrahydrate					
	Acute fish toxicity	LC50 mg/l	1378	96 h	Poecilia reticulata	Water res. 11(10):927-935 (1977)
	Fish toxicity	NOEC	268 mg/l	30 d	juvenile Topeka shiner and with juvenile Fathead m	Study report (2009)
						Growth tests estimated the test chemical

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No data available

**12.4. Mobility in soil**

No data available

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

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

No data available

**Further information**

No data available

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

**Contaminated packaging**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific



**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Calcium nitrate tetrahydrate for analysis, ACS**

Revision date: 13.07.2023

Product code: 22677

Page 9 of 10

to the industry and process.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 1454
<b>14.2. UN proper shipping name:</b>	CALCIUM NITRATE
<b>14.3. Transport hazard class(es):</b>	5.1
<b>14.4. Packing group:</b>	III
Hazard label:	5.1
Classification code:	O2
Special Provisions:	208
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	3
Hazard No:	50
Tunnel restriction code:	E

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 1454
<b>14.2. UN proper shipping name:</b>	CALCIUM NITRATE
<b>14.3. Transport hazard class(es):</b>	5.1
<b>14.4. Packing group:</b>	III
Hazard label:	5.1
Classification code:	O2
Special Provisions:	208
Limited quantity:	5 kg
Excepted quantity:	E1

**Marine transport (IMDG)**

<b>14.1. UN number or ID number:</b>	UN 1454
<b>14.2. UN proper shipping name:</b>	CALCIUM NITRATE
<b>14.3. Transport hazard class(es):</b>	5.1
<b>14.4. Packing group:</b>	III
Hazard label:	5.1
Special Provisions:	208, 967
Limited quantity:	5 kg
Excepted quantity:	E1
EmS:	F-A, S-Q

**Air transport (ICAO-TI/IATA-DGR)**

<b>14.1. UN number or ID number:</b>	UN 1454
<b>14.2. UN proper shipping name:</b>	CALCIUM NITRATE
<b>14.3. Transport hazard class(es):</b>	5.1
<b>14.4. Packing group:</b>	III
Hazard label:	5.1
Special Provisions:	A83 A803
Limited quantity Passenger:	10 kg
Passenger LQ:	Y546
Excepted quantity:	E1
IATA-packing instructions - Passenger:	559
IATA-max. quantity - Passenger:	25 kg
IATA-packing instructions - Cargo:	563
IATA-max. quantity - Cargo:	100 kg

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS:	No
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## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Calcium nitrate tetrahydrate for analysis, ACS

Revision date: 13.07.2023

Product code: 22677

Page 10 of 10

#### **14.6. Special precautions for user**

No dangerous good in sense of this transport regulation.

#### **14.7. Maritime transport in bulk according to IMO instruments**

not applicable

### **SECTION 15: Regulatory information**

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

##### **EU regulatory information**

Information according to 2012/18/EU (SEVESO III): P8 OXIDISING LIQUIDS AND SOLIDS

##### **National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).  
Water hazard class (D): 1 - slightly hazardous to water

#### **15.2. Chemical safety assessment**

For this substance a chemical safety assessment has not been carried out.

### **SECTION 16: Other information**

#### **Changes**

This data sheet contains changes from the previous version in section(s): 9,11,12.

#### **Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
Ox. Sol: Oxidising solid  
Acute Tox: Acute toxicity  
Eye Dam: Eye damage

#### **Relevant H and EUH statements (number and full text)**

H272 May intensify fire; oxidiser.  
H302 Harmful if swallowed.  
H318 Causes serious eye damage.