

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 31.03.2014

Version 2.9

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No.	102121
Product name	Calcium nitrate tetrahydrate for analysis EMSURE® ACS
REACH Registration Number	01-2119495093-35-XXXX
CAS-No.	13477-34-4

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

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).
-----------------	---

1.3 Details of the supplier of the safety data sheet

Responsible Department	EQ-RS * e-mail: prodsafe@merckgroup.com
Regional representation	Merck Chemicals Ltd * Boulevard Industrial Park * Padge Road * Beeston * Nottingham * NG9 2JR * Tel. 01159 430840 * information@merckchem.co.uk .

1.4 Emergency telephone number	+49 (0) 6151 722440
---------------------------------------	---------------------

SECTION 2. Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Oxidising solid, Category 3, H272

Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (67/548/EEC or 1999/45/EC)

O	Oxidising	R8
Xi	Irritant	R36

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)***Hazard pictograms*

Signal word
Warning

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

Hazard statements

H272 May intensify fire; oxidiser.
H319 Causes serious eye irritation.

Precautionary statements

Prevention

P210 Keep away from heat.
P221 Take any precaution to avoid mixing with combustibles.

Response

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

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word
Warning

CAS-No. 13477-34-4

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	Ca(NO ₃) ₂ * 4 H ₂ O	CaN ₂ O ₆ * 4 H ₂ O (Hill)
EC-No.	233-332-1	
Molar mass	236.15 g/mol	

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical Name (Concentration)

CAS-No.	Registration number	Classification
calcium nitrate tetrahydrate (<= 100 %)		
13477-34-4	01-2119495093-35-XXXX	Oxidising solid, Category 3, H272 Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

Hazardous components (1999/45/EC)

Chemical Name (Concentration)

CAS-No.	Classification
calcium nitrate tetrahydrate (<= 100 %)	
13477-34-4	O, Oxidising; R8 Xi, Irritant; R36

For the full text of the R-phrases mentioned in this Section, see Section 16.

3.2 Mixture

not applicable

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Nausea, Vomiting, irritant effects

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

nitrous gases, nitrogen oxides

5.3 Advice for firefighters

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains.

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry. Do not store near combustible materials.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

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).

Other protective equipment

protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	solid
Colour	colourless
Odour	odourless
Odour Threshold	not applicable
pH	5.0 - 7.0 at 50 g/l 25 °C
Melting point	45 °C
Boiling point/boiling range	not applicable
Flash point	does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	No information available.

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

Relative vapour density	not applicable
Density	1.82 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	1,470 g/l at 0 °C 2,710 g/l at 40 °C
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	> 130 °C Elimination of water of crystallisation 561 °C
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 3.

9.2 Other data

Ignition temperature	not applicable
Bulk density	ca. 1,000 kg/m ³

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

releases water of crystallisation when heated.

10.3 Possibility of hazardous reactions

Risk of explosion with:

organic combustible substances, Reducing agents, ammonium compounds

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 rat: 3,900 mg/kg (RTECS)

Symptoms: Nausea, Vomiting

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

Acute dermal toxicity

This information is not available.

Skin irritation

This information is not available.

Eye irritation

rabbit

Result: slight irritation

(IUCLID)

Causes serious eye irritation.

Sensitisation

This information is not available.

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Result: negative

(anhydrous substance) (IUCLID)

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of drinking- water supplies.

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 1454
14.2 Proper shipping name	CALCIUM NITRATE
14.3 Class	5.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 1454
14.2 Proper shipping name	CALCIUM NITRATE
14.3 Class	5.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

14.1 UN number UN 1454
14.2 Proper shipping name CALCIUM NITRATE
14.3 Class 5.1
14.4 Packing group III
14.5 Environmentally hazardous --
14.6 Special precautions for user yes
EmS F-A S-Q
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard 96/82/EC
Legislation Oxidising
3
Quantity 1: 50 t
Quantity 2: 200 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals not regulated

Substances of very high concern (SVHC) 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 $\geq 0.1\%$ (w/w).

National legislation

Storage class 5.1B

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Catalogue No. 102121
Product name Calcium nitrate tetrahydrate for analysis EMSURE® ACS

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H272 May intensify fire; oxidiser.
H319 Causes serious eye irritation.



Full text of R-phrases referred to under sections 2 and 3

R 8 Contact with combustible material may cause fire.
R36 Irritating to eyes.

Training advice

Provide adequate information, instruction and training for operators.

Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)  O Oxidising
 Xi Irritant
R-phrase(s) 8-36 Contact with combustible material may cause fire. Irritating to eyes.
EC-No. 233-332-1

Reduced labelling (≤125 ml)

Symbol(s)  O Oxidising
 Xi Irritant

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.