

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 31.07.2018

Version 16.8

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

Catalogue No. 107398

Product name Lead(II) nitrate for analysis EMSURE® ACS, Reag. Ph Eur

REACH Registration Number 01-2119492475-28-XXXX

CAS-No. 10099-74-8

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.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0

Responsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number Please contact the regional company representation in your country.

SECTION 2. Hazards identification**2.1 Classification of the substance or mixture**

Classification (REGULATION (EC) No 1272/2008)

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Product name Lead(II) nitrate for analysis EMSURE® ACS, Reag. Ph Eur

Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Inhalation, H332
Serious eye damage, Category 1, H318
Reproductive toxicity, Category 1A, H360Df
Specific target organ toxicity - repeated exposure, Category 1, Blood, Central nervous system, Immune system, Kidney, H372
Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 1, H410
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H360Df May damage the unborn child. Suspected of damaging fertility.

H302 + H332 Harmful if swallowed or if inhaled.

H318 Causes serious eye damage.

H372 Causes damage to organs (Blood, Central nervous system, Immune system, Kidney) through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201 Obtain special instructions before use.

P273 Avoid release to the environment.

P280 Wear eye protection.

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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.

P314 Get medical advice/ attention if you feel unwell.

Restricted to professional users.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H360Df May damage the unborn child. Suspected of damaging fertility.

H318 Causes serious eye damage.

H372 Causes damage to organs (Blood, Central nervous system, Immune system, Kidney) through prolonged or repeated exposure.

Precautionary statements

P201 Obtain special instructions before use.

P280 Wear eye 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.

Index-No. 082-001-00-6

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	Pb(NO ₃) ₂	N ₂ O ₆ Pb (Hill)
Index-No.	082-001-00-6	
EC-No.	233-245-9	

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Molar mass 331,2 g/mol

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

Chemical name (Concentration)

CAS-No. Registration number Classification

Lead(II) nitrate ($\geq 80\%$ - $\leq 100\%$)

The concentration stated or, in the absence of such concentrations, the generic concentrations set out in this Regulation are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture.

10099-74-8 01-2119492475-28-

XXXX

Oxidizing solid, Category 2, H272

Acute toxicity, Category 4, H302

Acute toxicity, Category 4, H332

Serious eye damage, Category 1, H318

Reproductive toxicity, Category 1A, H360Df

Specific target organ toxicity - repeated exposure, Category 1, H372

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

M-Factor: 10

Lead(II) nitrate ($\geq 80\%$ - $\leq 100\%$)

The concentration stated or, in the absence of such concentrations, the generic concentrations set out in this Regulation are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture.

10099-74-8 01-2119492475-28-

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Oxidizing solid, Category 2, H272

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Serious eye damage, Category 1, H318

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Specific target organ toxicity - repeated exposure, Category 1, H372

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

M-Factor: 10

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

3.2 Mixture

Not applicable

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SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. Call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

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

Vomiting, Salivation, metallic taste

Irritation and corrosion

Risk of serious damage to eyes.

The following applies to lead compounds in general: Due to the poor absorbability via the gastrointestinal tract, only very high doses lead to acute cases of intoxication. After a latency period of several hours, metallic taste, nausea, vomiting, and colics occur, in many instances followed by shock. Chronic uptake causes peripheral muscular weakness ("drop-wrist"), anaemia, and central-nervous disorders. Women of child-bearing age should not be exposed to the substance over longer periods of time (observe critical threshold).

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.

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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.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

nitrogen oxides

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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 let product enter drains.

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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

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Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry.

Keep locked up or in an area accessible only to qualified or authorised persons. 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

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.

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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

Tightly fitting safety goggles

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

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 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic 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

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properly documented.

Environmental exposure controls

Do not let product enter 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	3 - 4 at 50 g/l 20 °C
Melting point/range	458 - 459 °C Method: OECD Test Guideline 102
Boiling point/boiling range	> 500 °C at 1.013 hPa Method: OECD Test Guideline 103
Flash point	does not flash
Evaporation rate	Not applicable
Flammability (solid, gas)	The product is not flammable. Flammability (solids)

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Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	at 20 °C Method: OECD Test Guideline 104 low
Relative vapour density	Not applicable
Density	4,49 g/cm ³ at 20 °C Method: OECD Test Guideline 109
Relative density	Not applicable
Water solubility	486 g/l at 20 °C Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	400 °C Method: NF T 20-036
Decomposition temperature	No information available.
Viscosity, dynamic	Not applicable
Explosive properties	Not classified as explosive.

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Oxidizing properties	The product has been shown not to be oxidizing in a test following Directive 67/548/EEC (Method A17, Oxidizing properties).
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9.2 Other data

Ignition temperature	not combustible
Bulk density	ca. 1.850 kg/m ³
Particle size	Mean particle size 368,4 µm Method: OECD Test Guideline 110

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of explosion with:

organic combustible substances, ammonium compounds, acetates, Alcohols, Esters

10.4 Conditions to avoid

Strong heating (decomposition).

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

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SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Acute toxicity estimate: 500,1 mg/kg

Expert judgement

Acute inhalation toxicity

Acute toxicity estimate: 1,6 mg/l; dust/mist

Expert judgement

Symptoms: Possible damages: , mucosal irritations

Acute dermal toxicity

This information is not available.

Skin irritation

In vitro study

Result: non-corrosive

OECD Test Guideline 431

In vitro study

Result: No skin irritation

OECD Test Guideline 439

Eye irritation

In vitro study

Result: Severe irritations

OECD Test Guideline 437

Causes serious eye damage.

Sensitisation

Result: negative

Method: OECD Test Guideline 429

(in analogy to similar products)

Germ cell mutagenicity

This information is not available.

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Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Teratogenicity:

May damage the unborn child. Positive evidence from human epidemiological studies.

Reproductive toxicity:

May damage fertility. Positive evidence from human epidemiological studies.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Target Organs: Blood, Central nervous system, Immune system, Kidney

Aspiration hazard

This information is not available.

11.2 Further information

Systemic effects:

After absorption:

After a latency period:

metallic taste, Salivation, Vomiting, drop in blood pressure

A lethal effect is possible after the uptake of large quantities.

The following applies to lead compounds in general: Due to the poor absorbability via the gastrointestinal tract, only very high doses lead to acute cases of intoxication. After a latency period of several hours, metallic taste, nausea, vomiting, and colics occur, in many instances followed by shock. Chronic uptake causes peripheral muscular weakness ("drop-wrist"), anaemia, and central-nervous disorders. Women of child-bearing age should not be exposed to the substance over longer periods of time (observe critical threshold).

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

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 1,8 mg/l; 48 h

(ECOTOX Database)

Toxicity to algae

EC50 algae: 0,024 - 0,029 mg/l; 28 h

(Lit.)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

Not applicable

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.

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SECTION 13. Disposal considerations

Waste treatment methods

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 1469
14.2 Proper shipping name	LEAD NITRATE
14.3 Class	5.1 (6.1)
14.4 Packing group	II
14.5 Environmentally hazardous	yes
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 1469
14.2 Proper shipping name	LEAD NITRATE
14.3 Class	5.1 (6.1)
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	no

Sea transport (IMDG)

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14.1 UN number UN 1469
14.2 Proper shipping name LEAD NITRATE
14.3 Class 5.1 (6.1)
14.4 Packing group II
14.5 Environmentally hazardous yes
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 SEVESO III
Legislation ENVIRONMENTAL HAZARDS
E1
Quantity 1: 100 t
Quantity 2: 200 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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

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Substances of very high concern (SVHC)

This product does contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 59 above the respective regulatory concentration limit of > 0.1 % (w/w).

Contains: Lead(II) nitrate

National legislation

Storage class 5.1B

15.2 Chemical safety assessment

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

SECTION 16. Other information

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

H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



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Signal word

Danger

Hazard statements

H302 + H332 Harmful if swallowed or if inhaled.

H318 Causes serious eye damage.

H360 May damage fertility or the unborn child.

H372 Causes damage to organs (Blood, Central nervous system, Immune system, Kidney) through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201 Obtain special instructions before use.

P273 Avoid release to the environment.

P280 Wear eye protection.

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.

P314 Get medical advice/ attention if you feel unwell.

Further information

Restricted to professional users.

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.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

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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.