

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 15.07.2018

Version 13.4

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

1.1 Product identifier

| | |
|---------------------------|--|
| Catalogue No. | 102529 |
| Product name | Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS |
| REACH Registration Number | 01-2119517446-39-XXXX |
| CAS-No. | 6147-53-1 |

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 Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS

Acute toxicity, Category 4, Oral, H302

Eye irritation, Category 2, H319

Respiratory sensitisation, Category 1, H334

Skin sensitisation, Category 1, H317

Germ cell mutagenicity, Category 2, H341

Carcinogenicity, Category 1B, Inhalation, H350i

Reproductive toxicity, Category 1B, H360F

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

H350i May cause cancer by inhalation.

H360F May damage fertility.

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H341 Suspected of causing genetic defects.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

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Product name Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS

P201 Obtain special instructions before use.

P273 Avoid release to the environment.

P280 Wear protective gloves.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Restricted to professional users.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H350i May cause cancer by inhalation.

H360F May damage fertility.

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H341 Suspected of causing genetic defects.

Precautionary statements

P201 Obtain special instructions before use.

P280 Wear protective gloves.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Index-No. 027-006-00-6

2.3 Other hazards

None known.

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SECTION 3. Composition/information on ingredients

3.1 Substance

| | | |
|------------|---|--|
| Formula | $(\text{CH}_3\text{COO})_2\text{Co} \cdot 4 \text{H}_2\text{O}$ | $\text{CoC}_4\text{H}_6\text{O}_4 \cdot 4 \text{H}_2\text{O}$ (Hill) |
| Index-No. | 027-006-00-6 | |
| EC-No. | 200-755-8 | |
| Molar mass | 249,08 g/mol | |

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

Chemical name (Concentration)

| CAS-No. | Registration number | Classification |
|---------|---------------------|----------------|
|---------|---------------------|----------------|

| | | |
|---|--|--|
| cobalt(II)-acetate tetrahydrate (<= 100 %) | | |
|---|--|--|

The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture.

| | |
|-----------|-------------------|
| 6147-53-1 | 01-2119517446-39- |
|-----------|-------------------|

| |
|------|
| XXXX |
|------|

| |
|----------------------------------|
| Acute toxicity, Category 4, H302 |
|----------------------------------|

| |
|----------------------------------|
| Eye irritation, Category 2, H319 |
|----------------------------------|

| |
|---|
| Respiratory sensitisation, Category 1, H334 |
|---|

| |
|--------------------------------------|
| Skin sensitisation, Category 1, H317 |
|--------------------------------------|

| |
|--|
| Germ cell mutagenicity, Category 2, H341 |
|--|

| |
|-------------------------------------|
| Carcinogenicity, Category 1B, H350i |
|-------------------------------------|

| |
|---|
| Reproductive toxicity, Category 1B, H360F |
|---|

| |
|--|
| 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

SECTION 4. First aid measures

4.1 Description of first aid measures

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General advice

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

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. 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

irritant effects, Allergic reactions

Convulsions, Diarrhoea

Symptoms of an acute cobalt intoxication: diarrhoea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effect on kidneys (proteinuria, anuria), heart, and pancreas.

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.

Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

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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

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 generation and inhalation of dusts in all circumstances. 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

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.

Work under hood. Do not inhale substance/mixture.

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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 in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

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.

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 |

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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 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

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| | |
|---------------|--|
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| Product name | Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS |

| | |
|-----------------------------|---|
| Colour | red |
| Odour | of acetic acid |
| Odour Threshold | No information available. |
| pH | ca. 7,2 at 50 g/l 20 °C |
| Melting point | 140 °C Elimination of water of crystallisation |
| Boiling point/boiling range | Not applicable |
| Flash point | No information available. |
| Evaporation rate | No information available. |
| Flammability (solid, gas) | The product is not flammable. |
| Lower explosion limit | No information available. |
| Upper explosion limit | No information available. |
| Vapour pressure | No information available. |
| Relative vapour density | No information available. |
| Density | 1,70 g/cm ³ at 20 °C |
| Relative density | No information available. |

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| | |
|---------------|--|
| Catalogue No. | 102529 |
| Product name | Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS |

| | |
|------------------|--|
| Water solubility | 348 g/l at 20 °C Method: OECD Test Guideline 105 |
|------------------|--|

| | |
|--|----------------|
| Partition coefficient: n-octanol/water | Not applicable |
|--|----------------|

| | |
|---------------------------|---------------------------|
| Auto-ignition temperature | No information available. |
|---------------------------|---------------------------|

| | |
|---------------------------|---------------------------|
| Decomposition temperature | No information available. |
|---------------------------|---------------------------|

| | |
|--------------------|---------------------------|
| Viscosity, dynamic | No information available. |
|--------------------|---------------------------|

| | |
|----------------------|------------------------------|
| Explosive properties | Not classified as explosive. |
|----------------------|------------------------------|

| | |
|----------------------|------|
| Oxidizing properties | none |
|----------------------|------|

9.2 Other data

| | |
|--------------|--------------------------|
| Bulk density | ca.850 kg/m ³ |
|--------------|--------------------------|

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

sensitive to moisture

releases water of crystallisation when heated.

10.3 Possibility of hazardous reactions

Risk of explosion with:

Oxidizing agents

10.4 Conditions to avoid

no information available

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10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

no information available

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 503 mg/kg

OECD Test Guideline 401

Acute inhalation toxicity

Symptoms: Possible symptoms:, mucosal irritations

Acute dermal toxicity

This information is not available.

Skin irritation

Rabbit

Result: No skin irritation

OECD Test Guideline 404

(anhydrous substance)

Eye irritation

Rabbit

Result: irritating

OECD Test Guideline 405

(anhydrous substance)

Causes serious eye irritation.

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Product name Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS

Sensitisation

Patch test: Guinea pig

Result: positive

Method: OECD Test Guideline 406

The value is given in analogy to the following substances: cobalt(II) sulfate

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Carcinogenicity:

May cause cancer by inhalation.

Mutagenicity:

Suspected of causing genetic defects.

Reproductive toxicity:

May damage fertility.

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

Systemic effects:

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Product name Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS

After absorption:

Convulsions, Diarrhoea

Symptoms of an acute cobalt intoxication: diarrhoea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effect on kidneys (proteinuria, anuria), heart, and pancreas.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish (Chronic toxicity)

flow-through test NOEC Pimephales promelas (fathead minnow): 0,21 mg/l; 34 h

Analytical monitoring: yes

The value is given in analogy to the following substances: (anhydrous substance) Cobalt(II) chloride

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

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 3077 |
| 14.2 Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COBALT ACETATE) |
| 14.3 Class | 9 |
| 14.4 Packing group | III |
| 14.5 Environmentally hazardous | yes |
| 14.6 Special precautions for user | yes |
| Tunnel restriction code | - |
- Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

- | | |
|--------------------------------|---|
| 14.1 UN number | UN 3077 |
| 14.2 Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COBALT ACETATE) |
| 14.3 Class | 9 |
| 14.4 Packing group | III |
| 14.5 Environmentally hazardous | yes |

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| | |
|---------------|--|
| Catalogue No. | 102529 |
| Product name | Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS |

14.6 Special precautions for user no

Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

Sea transport (IMDG)

14.1 UN number UN 3077

14.2 Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COBALT ACETATE)

14.3 Class 9

14.4 Packing group III

14.5 Environmentally hazardous yes

14.6 Special precautions for user yes

EmS F-A S-F

Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

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.

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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

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: cobalt(II)-acetate tetrahydrate

National legislation

Storage class 6.1 D

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.

| | |
|-------|--|
| H302 | Harmful if swallowed. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H341 | Suspected of causing genetic defects. |
| H350i | May cause cancer by inhalation. |
| H360F | May damage fertility. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

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Product name Cobalt(II) acetate tetrahydrate for analysis EMSURE® ACS

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H341 Suspected of causing genetic defects.

H350i May cause cancer by inhalation.

H360 May damage fertility or the unborn child.

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 protective gloves.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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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.

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.