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

<table>
<thead>
<tr>
<th>1.1. Product identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>Product number</strong></td>
</tr>
<tr>
<td><strong>Synonyms; trade names</strong></td>
</tr>
<tr>
<td><strong>CAS number</strong></td>
</tr>
<tr>
<td><strong>EC number</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2. Relevant identified uses of the substance or mixture and uses advised against</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identified uses</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3. Details of the supplier of the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supplier</strong></td>
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<tr>
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</table>

<table>
<thead>
<tr>
<th>1.4. Emergency telephone number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emergency telephone</strong></td>
</tr>
</tbody>
</table>

### SECTION 2: Hazards identification

<table>
<thead>
<tr>
<th>2.1. Classification of the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification (EC 1272/2008)</strong></td>
</tr>
<tr>
<td><strong>Physical hazards</strong></td>
</tr>
<tr>
<td><strong>Health hazards</strong></td>
</tr>
<tr>
<td><strong>Environmental hazards</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2. Label elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EC number</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pictogram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="symbol.png" alt="Danger Symbol" /></td>
</tr>
</tbody>
</table>

| Signal word                                                                    | Danger                                        |
Cobalt(II) acetate tetrahydrate

Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
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.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements
P201 Obtain special instructions before use.
P273 Avoid release to the environment.
P284 [In case of inadequate ventilation] wear respiratory protection.
P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

2.3. Other hazards
No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances
Product name Cobalt(II) acetate tetrahydrate
CAS number 6147-53-1
EC number 612-153-6
Chemical formula C₄H₆CoO₄·4H₂O

SECTION 4: First aid measures

4.1. Description of first aid measures
General information Get medical advice/attention if you feel unwell.
Inhalation Remove person to fresh air and keep comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention if symptoms are severe or persist.
Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if symptoms are severe or persist.
Skin contact Remove contaminated clothing. Rinse with water. Continue to rinse for at least 15 minutes. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist.
Eye contact Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

4.2. Most important symptoms and effects, both acute and delayed
General information See Section 11 for additional information on health hazards.

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
Cobalt(II) acetate tetrahydrate

Suitable extinguishing media: Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards: None known.

Hazardous combustion products: Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Metal oxide(s).

5.3. Advice for firefighters

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Provide adequate ventilation. Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions

Environmental precautions: Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Wear protective clothing as described in Section 8 of this safety data sheet. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections: For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions: Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid generation and spreading of dust. Avoid contact with skin and eyes. Avoid inhalation of dust and vapours.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions: Keep container tightly closed. Store in a cool and well-ventilated place. Hygroscopic. Store at room temperature.

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

Occupational exposure limits
Cobalt(II) acetate tetrahydrate

No exposure limits known for ingredient(s).

8.2. Exposure controls

Appropriate engineering controls
Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection
Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection
Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection
Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Particulate filters should comply with European Standard EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls
Keep container tightly sealed when not in use.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>Colour</td>
<td>Pink. to Red.</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Initial boiling point and range</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.710 g/cm³</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>380 g/l water @ 20°C</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No data available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available.</td>
</tr>
</tbody>
</table>
Cobalt(II) acetate tetrahydrate

Viscosity  
No data available.

Explosive properties  
No data available.

Oxidising properties  
No data available.

9.2. Other information

Molecular weight  
249.08

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity  
No data available.

10.2. Chemical stability

Stability  
Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions  
No data available.

10.4. Conditions to avoid

Conditions to avoid  
Avoid heat. Water, moisture.

10.5. Incompatible materials

Materials to avoid  
Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products  
Oxides of carbon. Metal oxide(s).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD$_{50}$) mg/kg  
708.0

Species  
Rat

Notes (oral LD$_{50}$)  
Acute Tox. 4 - H302 Harmful if swallowed.

ATE oral (mg/kg)  
500.0

Acute toxicity - dermal

Notes (dermal LD$_{50}$)  
Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC$_{50}$)  
Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data  
Irritating.

Serious eye damage/irritation

Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation  
There is evidence that the product can cause respiratory hypersensitivity.
# Cobalt(II) acetate tetrahydrate

### Skin sensitisation
- **Skin sensitisation**: May cause skin sensitisation or allergic reactions in sensitive individuals.

### Germ cell mutagenicity
- **Genotoxicity - in vitro**: Suspected of causing genetic defects.

### Carcinogenicity
- **Carcinogenicity**: May cause cancer.
- **IARC carcinogenicity**: IARC Group 2B Possibly carcinogenic to humans.

### Reproductive toxicity
- **Reproductive toxicity - fertility**: May damage fertility.
- **Reproductive toxicity - development**: May damage the unborn child.

### Specific target organ toxicity - single exposure
- **STOT - single exposure**: Not classified as a specific target organ toxicant after a single exposure.

### Specific target organ toxicity - repeated exposure
- **STOT - repeated exposure**: Not classified as a specific target organ toxicant after repeated exposure.

### Aspiration hazard
- **Aspiration hazard**: Not relevant. Solid.

### General information
- **Avoid contact during pregnancy/while nursing.** May damage fertility. May cause cancer after repeated exposure. Risk of cancer depends on duration and level of exposure. May cause genetic defects. Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

### Inhalation
- **May cause sensitisation or allergic reactions in sensitive individuals.** Dust may irritate the respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

### Ingestion
- **May cause sensitisation or allergic reactions in sensitive individuals.** May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

### Skin contact
- **May cause skin sensitisation or allergic reactions in sensitive individuals.** Redness. Irritating to skin.

### Eye contact
- **Dust may cause slight irritation.**

### Route of exposure
- **Ingestion Inhalation Skin and/or eye contact**

### Target organs
- **No specific target organs known.**

### Medical considerations
- **Skin disorders and allergies.**

### RTECS #
- **AG3325000**
Cobalt(II) acetate tetrahydrate

SECTION 12: Ecological Information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

12.1. Toxicity

Toxicity This ingredient has not yet been fully tested and may have unforeseen effects.

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C50 ≤ 1
M factor (Acute) 1

Chronic aquatic toxicity

NOEC 0.01 < NOEC ≤ 0.1
Degradability Non-rapidly degradable
M factor (Chronic) 1

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.
Partition coefficient No data available.

12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment No data available.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 3077
UN No. (IMDG) 3077
UN No. (ICAO) 3077
UN No. (ADN) 3077

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Cobalt(II) acetate tetrahydrate

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

14.3. Transport hazard class(es)
ADR/RID class 9
ADR/RID classification code M7
ADR/RID label 9
IMDG class 9
ICAO class/division 9
ADN class 9

Transport labels

14.4. Packing group
ADR/RID packing group III
IMDG packing group III
ADN packing group III
ICAO packing group III

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user
EmS F-A, S-F
ADR transport category 3
Emergency Action Code 2Z
Hazard Identification Number (ADR/RID) 90
Tunnel restriction code (-)

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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.
Cobalt(II) acetate tetrahydrate

EU legislation


15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

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.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
CAS: Chemical Abstracts Service.
ATE: Acute Toxicity Estimate.
LC₅₀: Lethal Concentration to 50 % of a test population.
LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
EC₅₀: 50% of maximal Effective Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
vPvB: Very Persistent and Very Bioaccumulative.

Training advice

Only trained personnel should use this material.

Revision date

16/10/2018

Revision

1

SDS number

144926

Hazard statements in full

H302 Harmful if swallowed.
H315 Causes skin irritation.
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.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.