

ALFAAA18374

## Cobalt(II) acetate tetrahydrate

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

<b>产品说明:</b> <b>Product Description:</b>	<b>乙酸亚钴四水合物(II)</b> <b>Cobalt(II) acetate tetrahydrate</b>
<b>Cat No. :</b>	<b>A18374</b>
<b>Synonyms</b>	Acetic acid cobalt(2+) salt; Cobaltous acetate tetrahydrate.
<b>CAS No</b>	6147-53-1
<b>Molecular Formula</b>	C <sub>4</sub> H <sub>6</sub> Co O <sub>4</sub> · 4 H <sub>2</sub> O
<b>Supplier</b>	Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific) Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608
<b>Emergency Telephone Number</b>	For information <b>US</b> call: 001-800-227-6701 / <b>Europe</b> call: +32 14 57 52 11 Emergency Number <b>US</b> :001-201-796-7100 / <b>Europe</b> : +32 14 57 52 99 <b>CHEMTREC</b> Tel. No. <b>US</b> :001-800-424-9300 / <b>Europe</b> :001-703-527-3887
<b>E-mail address</b>	begel.sdsdesk@thermofisher.com
<b>Recommended Use</b>	Laboratory chemicals.
<b>Uses advised against</b>	No Information available

### SECTION 2. HAZARD IDENTIFICATION

Physical State	Appearance	Odor
Solid	Light red	vinegar-like
<b>Emergency Overview</b>		
Harmful if swallowed. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer by inhalation. May damage fertility or the unborn child. Very toxic to aquatic life with long lasting effects. Hygroscopic.		

#### Classification of the substance or mixture

Acute Oral Toxicity	Category 4
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive Toxicity	Category 1B
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

#### Label Elements

## Cobalt(II) acetate tetrahydrate



## Signal Word

## Danger

**Hazard Statements**

H302 - Harmful if swallowed  
 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  
 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  
 P202 - Do not handle until all safety precautions have been read and understood  
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
 P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P272 - Contaminated work clothing should not be allowed out of the workplace  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection  
 P284 - In case of inadequate ventilation wear respiratory protection

**Response**

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 P308 + P313 - IF exposed or concerned: Get medical advice/attention  
 P330 - Rinse mouth  
 P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor  
 P363 - Wash contaminated clothing before reuse

**Storage**

P403 - Store in a well-ventilated place

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Physical and Chemical Hazards**

Hygroscopic.

**Health Hazards**

Harmful if swallowed. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer by inhalation. May damage fertility or the unborn child.

**Environmental hazards**

Very toxic to aquatic life with long lasting effects. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

**Other Hazards**

Toxic to terrestrial vertebrates. This product does not contain any known or suspected endocrine disruptors.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Acetic acid, cobalt(2+) salt, tetrahydrate	6147-53-1	>95
Cobalt(II) acetate	71-48-7	-

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**SECTION 4. FIRST AID MEASURES****General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

**Ingestion**

Do NOT induce vomiting. Call a physician or poison control center immediately.

**Most important symptoms and effects**

None reasonably foreseeable. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

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

**Extinguishing media which must not be used for safety reasons**

No information available.

**Specific Hazards Arising from the Chemical**

Do not allow run-off from fire-fighting to enter drains or water courses.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

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**Methods for Containment and Clean Up**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Protect from moisture.

**Specific Use(s)**

Use in laboratories

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control Parameters**

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Acetic acid, cobalt(2+) salt, tetrahydrate				STEL: 0.3 mg/m <sup>3</sup> 15 min TWA: 0.1 mg/m <sup>3</sup> 8 hr Resp. Sens.	
Cobalt(II) acetate				STEL: 0.3 mg/m <sup>3</sup> 15 min TWA: 0.1 mg/m <sup>3</sup> 8 hr Resp. Sens.	

**Monitoring methods**

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust MDHS30/2 Cobalt and cobalt compounds in air Laboratory method using flame atomic absorption spectrometry

**Exposure Controls****Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

**Personal protective equipment**

**Eye Protection** Goggles (European standard - EN 166)

**Hand Protection** Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

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Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure
<b>Respiratory Protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
<b>Large scale/emergency use</b>	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced <b>Recommended Filter type:</b> Particulates filter conforming to EN 143
<b>Small scale/Laboratory use</b>	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. <b>Recommended half mask:-</b> Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Environmental exposure controls</b>	Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Light red	
<b>Physical State</b>	Solid	
<b>Odor</b>	vinegar-like	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	6.8	0.2 M aq.sol
<b>Melting Point/Range</b>	140 °C / 284 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	No information available	
<b>Flash Point</b>	No information available	<b>Method -</b> No information available
<b>Evaporation Rate</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available	
<b>Explosion Limits</b>	No data available	
<b>Vapor Pressure</b>	No data available	
<b>Vapor Density</b>	Not applicable	Solid
<b>Specific Gravity / Density</b>	No data available	
<b>Bulk Density</b>	No data available	
<b>Water Solubility</b>	380 g/L (20°C)	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Autoignition Temperature</b>	No data available	
<b>Decomposition Temperature</b>	No data available	
<b>Viscosity</b>	Not applicable	Solid
<b>Explosive Properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	
<b>Molecular Formula</b>	C4 H6 Co O4 . 4 H2 O	
<b>Molecular Weight</b>	249.08	

## SECTION 10. STABILITY AND REACTIVITY

## Cobalt(II) acetate tetrahydrate

<b>Stability</b>	Hygroscopic.
<b>Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water.
<b>Materials to avoid</b>	Strong oxidizing agents.

**Hazardous Decomposition Products** Cobalt oxides. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## SECTION 11. TOXICOLOGICAL INFORMATION

## Product Information

**(a) acute toxicity;**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic acid, cobalt(2+) salt, tetrahydrate	LD50 = 503 mg/kg ( Rat )		
Cobalt(II) acetate	LD50 = 503 mg/kg ( Rat )		

**(b) skin corrosion/irritation;** No data available

**(c) serious eye damage/irritation;** No data available

**(d) respiratory or skin sensitization;**

**Respiratory** Category 1  
**Skin** Category 1  
No information available

**(e) germ cell mutagenicity;**

Category 2  
Mutagenic effects have occurred in experimental animals

**(f) carcinogenicity;**

No data available  
The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Acetic acid, cobalt(2+) salt, tetrahydrate				Group 2B
Cobalt(II) acetate	Carc Cat. 1B			Group 2B

**(g) reproductive toxicity;**  
**Reproductive Effects**

Category 1B  
May impair fertility.

**(h) STOT-single exposure;**

No data available

**(i) STOT-repeated exposure;**

No data available

**Target Organs**

None known.

**(j) aspiration hazard;**

Not applicable  
Solid

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**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Cobalt(II) acetate	LC50: = 3.5 mg/L, 96h flow-through (Oncorhynchus mykiss)			

**Persistence and Degradability** Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary

**Persistence** May persist, based on information available.

**Degradability** Not relevant for inorganic substances.

**Degradation in sewage treatment plant** Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Bioaccumulative Potential** May have some potential to bioaccumulate

**Mobility in soil** The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13. DISPOSAL CONSIDERATIONS

**Waste from Residues/Unused Products** Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

**Other Information** Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

## SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

**UN-No** UN3077

**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Technical Shipping Name** Cobalt (II) acetate

**Hazard Class** 9

**Packing Group** III

## Cobalt(II) acetate tetrahydrate

**IMDG/IMO**

**UN-No** UN3077  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
**Technical Shipping Name** Cobalt (II) acetate  
**Hazard Class** 9  
**Packing Group** III

**IATA**

**UN-No** UN3077  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
**Technical Shipping Name** Cobalt (II) acetate  
**Hazard Class** 9  
**Packing Group** III

**Special Precautions for User** No special precautions required

**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Acetic acid, cobalt(2+) salt, tetrahydrate	-	-	X	X	-	-	-	-	X	X	X	-
Cobalt(II) acetate	-	-	X	X	200-755-8	X	X	X	X	X	X	KE-06062

**National Regulations****SECTION 16. OTHER INFORMATION**

**Prepared By** Health, Safety and Environmental Department  
**Creation Date** 22-Jun-2010  
**Revision Date** 29-Apr-2024  
**Revision Summary** New emergency telephone response service provider.

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

First aid for chemical exposure, including the use of eye wash and safety showers.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

Chemical incident response training.

**Legend**

**CAS** - Chemical Abstracts Service

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical



**Cobalt(II) acetate tetrahydrate**

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Substances/EU List of Notified Chemical Substances

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**IECS** - Chinese Inventory of Existing Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**TWA** - Time Weighted Average

**ACGIH** - American Conference of Governmental Industrial Hygienists

**IARC** - International Agency for Research on Cancer

**DNEL** - Derived No Effect Level

**PNEC** - Predicted No Effect Concentration

**RPE** - Respiratory Protective Equipment

**LD50** - Lethal Dose 50%

**LC50** - Lethal Concentration 50%

**EC50** - Effective Concentration 50%

**NOEC** - No Observed Effect Concentration

**POW** - Partition coefficient Octanol:Water

**PBT** - Persistent, Bioaccumulative, Toxic

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**OECD** - Organisation for Economic Co-operation and Development

**ATE** - Acute Toxicity Estimate

**BCF** - Bioconcentration factor

**VOC** - (Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text

**End of Safety Data Sheet**