

ALFAA36418

## Cobalt(II) nitrate hexahydrate

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

产品说明: Product Description:	六水合硝酸钴(II), ACS, 98.0-102.0% Cobalt(II) nitrate hexahydrate
Cat No. :	36418
CAS No	10026-22-9
Molecular Formula	Co(NO <sub>3</sub> ) <sub>2</sub> ·6H <sub>2</sub> O
Supplier	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
Emergency Telephone Number	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
E-mail address	begel.sdsdesk@thermofisher.com
Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

### SECTION 2. HAZARD IDENTIFICATION

<b>Physical State</b> Solid Crystalline	<b>Appearance</b> Red	<b>Odor</b> Odorless
<b>Emergency Overview</b> May intensify fire; oxidizer. Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye damage. Harmful if inhaled. 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.		

#### Classification of the substance or mixture

Oxidizing solids	Category 2
Acute Oral Toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Serious Eye Damage/Eye Irritation	Category 1
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) nitrate hexahydrate

Component	CAS No	Weight %
Cobalt nitrate hexahydrate	10026-22-9	<=100

## SECTION 4. FIRST AID MEASURES

**General Advice**

If symptoms persist, call a physician.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects**

Causes eye burns. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Causes severe eye damage. 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**

Carbon dioxide (CO<sub>2</sub>). Powder. Water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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

No information available.

**Specific Hazards Arising from the Chemical**

Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood, paper, oil, clothing, etc.). 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.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent

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product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

**Methods for Containment and Clean Up**

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

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

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation. Keep away from clothing and other combustible materials.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials.

**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
Cobalt nitrate hexahydrate	TWA: 0.02 mg/m <sup>3</sup>			STEL: 0.3 mg/m <sup>3</sup> 15 min TWA: 0.1 mg/m <sup>3</sup> 8 hr Resp. Sens.	

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

**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 MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry MDHS 99 Metals in air by ICP-AES

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

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. 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
Nitrile rubber	480 minutes	0.11 mm	EN 374	(minimum requirement)

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)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g.

**SAFETY DATA SHEET****Cobalt(II) nitrate hexahydrate**

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>	Long sleeved clothing
<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>	In case of insufficient ventilation, wear suitable respiratory equipment <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. 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>	Red	
<b>Physical State</b>	Solid Crystalline	
<b>Odor</b>	Odorless	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	No information available	
<b>Melting Point/Range</b>	55 - 56 °C / 131 - 132.8 °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>	1.87 g/cm3	@ 20 °C
<b>Bulk Density</b>	No data available	
<b>Water Solubility</b>	No information available	
<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>	Oxidizer	
<b>Molecular Formula</b>	Co(NO3)2.6H2 O	
<b>Molecular Weight</b>	291.04 (182.94anhy)	
<b>Refractive index</b>	1.52	

**SECTION 10. STABILITY AND REACTIVITY**

**SAFETY DATA SHEET****Cobalt(II) nitrate hexahydrate**

<b>Stability</b>	Oxidizer: Contact with combustible/organic material may cause fire.
<b>Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	No information available.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Combustible material.
<b>Materials to avoid</b>	Reducing Agent. Strong reducing agents. Combustible material.

**Hazardous Decomposition Products** Nitrogen oxides (NOx). Cobalt oxides.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Product Information

**(a) acute toxicity;**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cobalt nitrate hexahydrate	LD50 = 691 mg/kg ( Rat )		

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

**(c) serious eye damage/irritation;** Category 1

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

Respiratory  
Skin

Category 1  
Category 1

May cause sensitization by skin contact

**(e) germ cell mutagenicity;** Category 2

**(f) carcinogenicity;** No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Cobalt nitrate hexahydrate				Group 2B

**(g) reproductive toxicity;** Category 1B

**(h) STOT-single exposure;** No data available

**(i) STOT-repeated exposure;** No data available

**Target Organs**

No information available.

**(j) aspiration hazard;** Not applicable  
Solid

**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

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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.

**Persistence and Degradability****Persistence  
Degradation in sewage  
treatment plant**

Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary  
May persist.  
Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Bioaccumulative Potential**

Product has a high potential to bioconcentrate

**Mobility in soil**

No information available

**Endocrine Disruptor Information  
Persistent Organic Pollutant  
Ozone Depletion Potential**

This product does not contain any known or suspected endocrine disruptors  
This product does not contain any known or suspected substance  
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  
Proper Shipping Name  
Technical Shipping Name  
Hazard Class  
Packing Group**

UN1477  
NITRATES, INORGANIC, N.O.S.  
(Cobalt (II) nitrate hexahydrate)  
5.1  
III

**IMDG/IMO****UN-No  
Proper Shipping Name  
Technical Shipping Name  
Hazard Class  
Packing Group**

UN1477  
NITRATES, INORGANIC, N.O.S.  
(Cobalt (II) nitrate hexahydrate)  
5.1  
III

**IATA****UN-No  
Proper Shipping Name  
Technical Shipping Name  
Hazard Class**

UN1477  
NITRATES, INORGANIC, N.O.S.  
(Cobalt (II) nitrate hexahydrate)  
5.1

## Cobalt(II) nitrate hexahydrate

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/NDSL), 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
Cobalt nitrate hexahydrate	-	-	X	X	-	-	-	X	X	X	X	-

## National Regulations

## SECTION 16. OTHER INFORMATION

Prepared By Health, Safety and Environmental Department  
Revision Date 01-May-2024  
Revision Summary New emergency telephone response service provider.

## Training Advice

Chemical incident response training.

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

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

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

PNEC - Predicted No Effect Concentration

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

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

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

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

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

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

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**

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**End of Safety Data Sheet**