

## SAFETY DATA SHEET

Creation Date 09-Mar-2004

Revision Date 19-Jan-2018

Revision Number 4

### 1. Identification

**Product Name** Cobalt(II) nitrate hexahydrate

**Cat No. :** AC213090000; AC213090010; AC213090050; AC213091000;  
AC213095000

**CAS-No** 10026-22-9  
**Synonyms** Cobaltous nitrate hexahydrate

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Not for food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

##### **Emergency Telephone Number**

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

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

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

May intensify fire; oxidizer  
Harmful if swallowed  
May cause an allergic skin reaction  
May damage fertility

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



### Precautionary Statements

#### Prevention

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Avoid breathing dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area  
 In case of inadequate ventilation wear respiratory protection  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 Keep/Store away from clothing/ other combustible materials  
 Take any precaution to avoid mixing with combustibles

#### Response

IF exposed or concerned: Get medical attention/advice

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

#### Skin

IF ON SKIN: Wash with plenty of soap and water  
 If skin irritation or rash occurs: Get medical advice/attention  
 Wash contaminated clothing before reuse

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER or doctor/physician

#### Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 Rinse mouth

#### Fire

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### Storage

Store locked up

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

## 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Cobalt(II) nitrate	10141-05-6	-

Cobalt nitrate hexahydrate	10026-22-9	>95
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#### 4. First-aid measures

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Eye Contact</b>	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.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Inhalation</b>	Move 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.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Most important symptoms and effects</b>	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
<b>Notes to Physician</b>	Treat symptomatically

#### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	No information available
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Oxidizing Properties</b>	Oxidizer
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

#### Specific Hazards Arising from the Chemical

Oxidizer: Contact with combustible/organic material may cause fire. Do not allow run-off from fire fighting to enter drains or water courses. May ignite combustibles (wood paper, oil, clothing, etc.).

#### Hazardous Combustion Products

Nitrogen oxides (NOx) Cobalt oxides.

#### 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.

#### NFPA

**Health**  
3

**Flammability**  
1

**Instability**  
1

**Physical hazards**  
OX

#### 6. Accidental release measures

<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.
<b>Environmental Precautions</b>	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.
<b>Methods for Containment and Clean Up</b>	Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

## 7. Handling and storage

<b>Handling</b>	Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe vapors/dust. Do not ingest. Keep away from clothing and other combustible materials.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials.

## 8. Exposure controls / personal protection

### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Cobalt(II) nitrate	TWA: 0.02 mg/m <sup>3</sup>			
Cobalt nitrate hexahydrate	TWA: 0.02 mg/m <sup>3</sup>			

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

<b>Engineering Measures</b>	Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.
<b>Personal Protective Equipment</b>	
<b>Eye/face Protection</b>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<b>Skin and body protection</b>	Long sleeved clothing.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Solid
<b>Appearance</b>	Red brown
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	55 - 56 °C / 131 - 132.8 °F
<b>Boiling Point/Range</b>	No information available
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	Not applicable

Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	134 g/100ml
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Co N2 O6 . 6 H2 O
Molecular Weight	291.02

## 10. Stability and reactivity

Reactive Hazard	Yes
Stability	Hygroscopic. Oxidizer: Contact with combustible/organic material may cause fire.
Conditions to Avoid	Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water. Combustible material.
Incompatible Materials	Strong oxidizing agents, Strong reducing agents, Combustible material
Hazardous Decomposition Products	Nitrogen oxides (NOx), Cobalt oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cobalt(II) nitrate	LD50 = 434 mg/kg ( Rat )	Not listed	Not listed
Cobalt nitrate hexahydrate	LD50 = 691 mg/kg ( Rat )	Not listed	Not listed

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Causes eye burns
Sensitization	May cause sensitization by inhalation and skin contact
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Cobalt(II) nitrate	10141-05-6	Group 2B	Reasonably Anticipated	A3	X	Not listed
Cobalt nitrate hexahydrate	10026-22-9	Group 2B	Reasonably Anticipated	A3	X	Not listed

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

ACGIH: (American Conference of Governmental Industrial Hygienists)

Group 2B - Possibly Carcinogenic to Humans  
 A1 - Known Human Carcinogen  
 A2 - Suspected Human Carcinogen  
 A3 - Animal Carcinogen  
 ACGIH: (American Conference of Governmental Industrial Hygienists)

<b>Mutagenic Effects</b>	Mutagenic effects have occurred in experimental animals.
<b>Reproductive Effects</b>	Possible risk of impaired fertility.
<b>Developmental Effects</b>	No information available.
<b>Teratogenicity</b>	No information available.
<b>STOT - single exposure</b>	None known
<b>STOT - repeated exposure</b>	None known
<b>Aspiration hazard</b>	No information available
<b>Symptoms / effects, both acute and delayed</b>	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
<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

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

<b>Persistence and Degradability</b>	based on information available. May persist
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	Will likely be mobile in the environment due to its water solubility.

## 13. Disposal considerations

<b>Waste Disposal Methods</b>	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
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## 14. Transport information

### DOT

<b>UN-No</b>	UN1477
<b>Proper Shipping Name</b>	NITRATES, INORGANIC, N.O.S.
<b>Proper technical name</b>	Cobalt nitrate hexahydrate, Cobalt(II) nitrate
<b>Hazard Class</b>	5.1
<b>Packing Group</b>	II

### TDG

<b>UN-No</b>	UN1477
<b>Proper Shipping Name</b>	NITRATES, INORGANIC, N.O.S.
<b>Hazard Class</b>	5.1
<b>Packing Group</b>	II

### IATA

<b>UN-No</b>	UN1477
<b>Proper Shipping Name</b>	NITRATES, INORGANIC, N.O.S.
<b>Hazard Class</b>	5.1
<b>Packing Group</b>	II

**IMDG/IMO**

UN-No	UN1477
Proper Shipping Name	NITRATES, INORGANIC, N.O.S.
Hazard Class	5.1
Packing Group	II

<b>15. Regulatory information</b>
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All of the components in the product are on the following Inventory lists: X = listed

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Cobalt(II) nitrate	X	X	-	233-402-1	-		X	X	X	X	X
Cobalt nitrate hexahydrate	-	-	-	-	-		X	X	X	X	-

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Cobalt(II) nitrate	10141-05-6	-	0.1
Cobalt nitrate hexahydrate	10026-22-9	>95	0.1 1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Cobalt(II) nitrate	X		-
Cobalt nitrate hexahydrate	X		-

OSHA Occupational Safety and Health Administration

Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Cobalt(II) nitrate	X	X	X	X	X
Cobalt nitrate	-	X	X	X	-

hexahydrate					
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**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**16. Other information**

**Prepared By** Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Creation Date** 09-Mar-2004  
**Revision Date** 19-Jan-2018  
**Print Date** 19-Jan-2018  
**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**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 SDS**