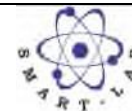


**MATERIAL SAFETY DATA SHEET**

According to regulation (EU) no.1907/2006

**COBALT (II) NITRATE HEXAHYDRATE**

Revision : 01

Date : July 19<sup>th</sup>, 2022

MSDS Number : 061

## Section 1 - Chemical Product and Company Identification

- 1.1 Product Name** : **COBALT(II) NITRATE HEXAHYDRATE**  
**Synonyms** : Cobaltous Nitrate Hexahydrate  
**CAS No.** : 10026-22-9  
**HS Code** : 2834 29 90  
**Chemical Formula** :  $\text{Co}(\text{NO}_3)_2 \cdot 6 \text{H}_2\text{O}$  Hill  $\text{CoN}_2\text{O}_6 \cdot 6\text{H}_2\text{O}$   
**Molecular Weight** : 291.04 g/mol  
**Product Code** : A-2151  
**Brand** : SMART-LAB
- 1.2 Manufacturer** : **PT.Smart-Lab Indonesia**  
**Address** : Ruko Boulevard Taman Tekno Blok E No.10-11,BSD Sektor XI Serpong, Tangerang - Indonesia  
**Website** : [www.smartlabid.com](http://www.smartlabid.com)  
**Email** : sales@smartlabid.com  
**For information** : Telp: +62 21- 7588 0205(Hunting), fax: +62-21-7588 0198  
**Emergency Telephone**: +62-21-7588 0205(Hunting)
- 1.3 Application** : General Chemical reagent

## Section 2 - Hazards Identification

**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Oxidizing solids (Category 2), H272  
 Acute toxicity, Oral (Category 4), H302  
 Serious eye damage (Category 1), H318  
 Respiratory sensitization (Category 1), H334  
 Skin sensitization (Category 1), H317  
 Germ cell mutagenicity (Category 2), H341  
 Carcinogenicity, Inhalation (Category 1B), H350i  
 Reproductive toxicity (Category 1B), H360FD Short-term (acute) aquatic hazard (Category 1),H400  
 Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16

**2.2 Label elements**

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H272

May intensify fire; oxidizer.

H302

Harmful if swallowed.

H317

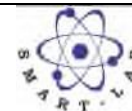
May cause an allergic skin reaction.

H318

Causes serious eye damage.

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H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360FD	May damage fertility. May damage the unborn child.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
Supplemental Hazard Statements	none

**2.3 Other hazards**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## Section 3 - Composition, Information on Ingredients

**3.1 Substances**

Synonyms	: Cobaltous Nitrate Hexahydrate
Formula	: $\text{Co}(\text{NO}_3)_2 \cdot 6 \text{H}_2\text{O}$ Hill $\text{CoN}_2\text{O}_6 \cdot 6\text{H}_2\text{O}$
Molecular weight	: 291.04 g/mol
CAS-No.	: 10026-22-9
EC-No.	: 233-402-1

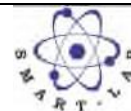
**3.2 Mixture****Hazardous ingredients according to Regulation (EC) No 1272/2008**

Component	Classification	Concentration
Cobalt(II) nitrate hexahydrate CAS-No. 10026-22-9 EC-No. 233-402-1	Carcinogenicity, Category 1B, H350i Germ cell mutagenicity, Category 2, H341 Reproductive toxicity, Category 1B, H360F Respiratory sensitisation, Category 1, H334 Skin sensitisation, Category 1, H317 Acute aquatic toxicity, Category 1, H400 Chronic aquatic toxicity, Category 1, H410 M- Factor: 10	<=100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## Section 4 - First Aid Measures

<b>MATERIAL SAFETY DATA SHEET</b>		
According to regulation (EU) no.1907/2006		
<b>COBALT (II) NITRATE HEXAHYDRATE</b>		
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**4.1 Description of first aid measures****General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

**If inhaled**

After inhalation: fresh air. Call in physician.

**In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

**If swallowed**

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**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data 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**

Nitrogen oxides (NO<sub>x</sub>), Cobalt/cobalt oxides

Not combustible. Has a fire-promoting effect due to release of oxygen. Ambient fire may liberate hazardous vapours.

**5.3 Advice 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.

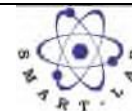
**5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Section 6 - Accidental Release Measures

**MATERIAL SAFETY DATA SHEET**

According to regulation (EU) no.1907/2006

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**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. For personal protection 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**

For disposal see section 13.

## Section 7 - Handling and Storage

**7.1 Precautions for safe handling****Advice on safe handling**

Work under hood. Do not inhale substance/mixture.

**Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition.

**Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities****Storage conditions**

Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons. Do not store near combustible materials.

**Storage class**

Storage class (TRGS 510): 5.1B: Oxidizing hazardous materials

**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**

Ingredients with workplace control parameters

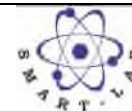
**8.2 Exposure controls****Appropriat engineering controls**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Personal protective equipment**

**MATERIAL SAFETY DATA SHEET**

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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**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Full contact**

Material: Nitrile rubber  
 Minimum layer thickness: 0.11 mm  
 Break through time: 480 min  
 Material tested: Dermatril® (KCL 740, Size M)

**Splash contact**

Material: Nitrile rubber  
 Minimum layer thickness: 0.11 mm  
 Break through time: 480 min  
 Material tested: Dermatril® (KCL 740, Size M)

**Body Protection**

protective clothing

**Respiratory protection**

required when dusts are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type P3

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.

**Control of environmental exposure**

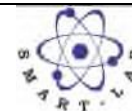
Do not let product enter drains

## Section 9 - Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

Appearance	Form: solid
	Colour: red brown
Odour	weak
Odour Threshold	No data available
pH	4,0 at 100 g/l at 20 °C
Melting point/freezingpoint	Melting point/range: 55 °C - lit.

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Initial boiling point and boiling range	No data available
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	1,88 g/cm <sup>3</sup>
Water solubility	soluble
Partition coefficient: octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	Not classified as explosive.
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 2.

**9.2 Other safety information**Bulk density ca.800 kg/m<sup>3</sup>

## Section 10 - Stability and Reactivity

**10.1 Reactivity**

No data available

**10.2 Chemical stability**

sensitive to moisture

**10.3 Possibility of hazardous reactions**Risk of explosion with:  
ammonium compounds carbon/soot oxidisable substances**10.4 Conditions to avoid**

Heat. Exposure to moisture. no information available

**10.5 Incompatible materials**

No data available

**10.6 Hazardous decomposition products**

In the event of fire: see section 5

## Section 11 - Toxicological Information

**11.1 Information on toxicological effects****Acute toxicity**

Acute toxicity estimate Oral - 434 mg/kg (Calculation method)

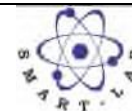
LD50 Oral - Rat - male and female - 978 mg/kg (OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

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**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h (OECD Test Guideline 404)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Cobalt(II) nitrate

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes serious eye damage. (OECD Test Guideline 405)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Cobalt(II) nitrate

**Respiratory or skin sensitisation**

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) (anhydrous substance) May cause allergic skin reaction. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) (anhydrous substance)

**Germ cell mutagenicity**

Suspected of causing genetic defects

**Carcinogenicity**

May cause cancer by inhalation.

**Reproductive toxicity**

May damage the unborn child.

May damage fertility

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU). 2018/605 at levels of 0.1% or higher. Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect level) - 3 mg/kg

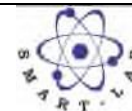
RTECS: QU7355500

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. 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. The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities. somnolence Other dangerous properties can not be excluded. This substance should be handled with particular care.

## Section 12 - Ecological Information

**MATERIAL SAFETY DATA SHEET**

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**12.1 Toxicity****Toxicity to fish**

semi-static test LC50 - Pimephales promelas (fathead minnow) - 1,866 mg/l - 96 h (US-EPA)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Cobalt(II) nitrate

**Toxicity to daphnia and other aquatic invertebrates**

static test LC50 - Ceriodaphnia dubia (water flea) - 0,39 mg/l - 48 h (US-EPA)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Cobalt(II) nitrate

**Toxicity to algae**

static test ErC50 - Pseudokirchneriella subcapitata - 0,095 mg/l - 72 h (OECD Test Guideline 201)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Cobalt(II) nitrate

**Toxicity to bacteria**

static test EC50 - activated sludge - 120 mg/l - 30 min (OECD Test Guideline 209)

Remarks: (anhydrous substance)

The value is given in analogy to the following substances: Cobalt(II) nitrate

**12.2 Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

**12.6 Other adverse effects**

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Discharge into the environment must be avoided.

## Section 13 - Disposal Considerations

**13.1 Waste treatment methods****Product**

Dissolve or mix the material with a combustible solvent and burn in a chem scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

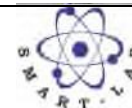
**Contaminated packaging**

Dispose of as unused product.



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## Section 14 - Transport Information

**14.1 UN number**

ADR/RID: 1477

IMDG: 1477

IATA: 1477

**14.2 UN proper shipping name**

ADR/RID: NITRATES, INORGANIC, N.O.S. (Cobaltous nitrate, hexahydrate)

IMDG: NITRATES, INORGANIC, N.O.S. (Cobaltous nitrate, hexahydrate)

IATA: Nitrates, inorganic, n.o.s.

**14.3 Transport hazard class(es)**

ADR/RID: 5.1

IMDG: 5.1

IATA: 5.1

**14.4 Packaging group**

ADR/RID: II

IMDG: II

IATA: II

**14.5 Environmental hazards**

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: no

**14.6 Special precautions for user****Further information**

No data available

## Section 15 - Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

: 600-049-3

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : 600-049-3

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

: OXIDISING LIQUIDS AND SOLIDS

: ENVIRONMENTAL HAZARDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work

**15.2 Chemical safety assessment**

For this product a chemical safety assessment was not carried out

## Section 16 - Additional Information

**Full text of H-Statements referred to under sections 2 and 3.**

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

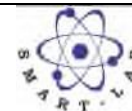
H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

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

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H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360F	May damage fertility.
H360FD	May damage fertility. May damage the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**National Fire Protection Association (U.S.A.):**

Health: 3

Flammability: 1

Reactivity: 1

**Revision history :**

Date	Rev	Description
Mar 10, 2018	00	-
July 19, 2022	01	thorough revision

**Further information**

*The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. PT. Smartlab Indonesia shall not be held liable for any damage resulting from handling or from contact with the above product.*