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

1.1. Product Identifiers

Product name : Cobalt nitrate hexahydrate, Cobalt (II) nitrate hexahydrate
Type of product : Chemical substance
Product grade : LR, AR/ACS, AR, Special grade
CAS No : 10026-22-9

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Reagent for analysis

1.3. Details of the supplier of the safety data sheet

RYZE CHEMIE PRIVATE LIMITED
Gami Industrial Park, Unit.13, Second Floor, C Block,
Plot No.C-39-A, TTC Industrial area, Navi Mumbai,
Thane, Maharashtra-400705
Safety@ryzechemie.com

1.4. Emergency Telephone Number: +91- 9930060404

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Reproductive toxicity, Category 1B	H360F: May damage fertility.
Oxidizing solids, Category 2	H272: May intensify fire; oxidizer.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Serious eye damage, Category 1	H318: Causes serious eye damage.

Respiratory sensitization, Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Germ cell mutagenicity, Category 2	H341: Suspected of causing genetic defects.
Carcinogenicity, Category 1B	H350i: May cause cancer by inhalation.
Reproductive toxicity, Category 1B	H360F: May damage fertility.
Specific target organ toxicity - repeated exposure, Category 2, Lungs	H373: May cause damage to organs through prolonged or repeated exposure if inhaled.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

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.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360F	May damage fertility.
H373	May cause damage to organs (Lungs) through prolonged or repeated exposure if inhaled.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

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.

Response:

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.

Additional Labelling

Restricted to professional users.

Reduced Labelling (<= 125 ml)

Hazard pictograms :



Signal word	Danger
Hazard Statements	
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H318	Causes serious eye damage.
H360F	May damage fertility.
Precautionary Statements	
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
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.

Ecological information: 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.

Toxicological information: 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.

SECTION 3: Composition/information on ingredients

3.1 Substances

EC-No. : 233-402-1

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)	M-Factor, SCL, ATE
Cobaltous nitrate, hexahydrate	10026-22-9 233-402-1	>= 90 - <= 100	M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1 specific concentration limit Carc. 1B; H350i >= 0,01 % Acute toxicity estimate Acute oral toxicity: 978 mg/kg

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : First aiders need to protect themselves.
Show this 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

Specific hazards during fire fighting	:	Not combustible. Fire may cause evolution of: nitrogen oxides Has a fire-promoting effect due to release of oxygen. Ambient fire may liberate hazardous vapours.
Hazardous combustion products	:	Nitrogen oxides (NOx) Cobalt/cobalt oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Further information	:	Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	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

Environmental precautions	:	Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Methods for 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 considerations 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

Further information on 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 (TRGS 510)	:	5.1B, Oxidizing hazardous materials
Further information on storage stability	:	Recommended storage temperature see product label.

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

Occupational Exposure Limits

8.2 Exposure controls

Personal protective equipment

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

Hand protection

Material	:	Nitrile rubber
Break through time	:	480 min
Glove thickness	:	0,11 mm
Protective index	:	Full contact
Manufacturer	:	KCL 741 Dermatril® L

Material	:	Nitrile rubber
Break through time	:	480 min
Glove thickness	:	0,11 mm
Protective index	:	Splash contact
Manufacturer	:	KCL 741 Dermatril® L

Remarks	:	This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin and 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.

Advice	:	Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	solid
Color	:	red brown
Odor	:	No data available
Melting point	:	55 °C
Boiling point	:	No data available
Flammability	:	The product is not flammable.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	4,0 (20 °C) Concentration: 100 g/l
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Flow time	:	No data available
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Not applicable for inorganic substances
Vapor pressure	:	No data available
Relative density	:	No data available

Density	:	1,88 g/cm3
Bulk density	:	ca. 800 kg/m3
Relative vapour density	:	No data available

9.2 Other information

Explosives	:	Not classified as explosive.
Oxidizing properties	:	The substance or mixture is classified as oxidizing with the category 2.
Burning rate	:	No data available
Evaporation rate	:	No data available
Molecular weight	:	291,03 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Hazardous reactions : Risk of explosion with:

ammonium compounds
carbon/soot
oxidisable substances

10.4 Conditions to avoid

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
LD50 Oral - Rat - male and female - 978 mg/kg
(OECD Test Guideline 401)
Acute toxicity estimates Oral - 978 mg/kg
(ATE value derived from LD50/LC50 value)
Inhalation: No data available
Dermal: No data available

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 sensitization
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 fertility.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Inhalation - May cause damage to organs through prolonged or repeated exposure.
- Lungs

Aspiration hazard
No data available

11.2 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 - No observed adverse effect level - 3 mg/kg

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Symptoms of an acute cobalt intoxication: diarrhea, 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

12.1 Toxicity

Components:

Cobaltous nitrate, hexahydrate:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 1,866 mg/l End point: mortality Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Method: US-EPA GLP: yes Remarks: (anhydrous substance) The value is given in analogy to the following substances: Cobalt (II) nitrate
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Ceriodaphnia dubia (water flea)): 0,39 mg/l End point: mortality Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: US-EPA GLP: yes Remarks: (anhydrous substance) The value is given in analogy to the following substances: Cobalt (II) nitrate
Toxicity to algae/aquatic	:	ErC50 (Pseudokirchneriella subcapitata): 0,095 mg/l

plants		Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: (anhydrous substance) The value is given in analogy to the following substances: Cobalt (II) nitrate
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 (activated sludge): 120 mg/l End point: Growth rate Exposure time: 30 min Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 209 GLP: yes Remarks: (anhydrous substance) The value is given in analogy to the following substances: Cobalt (II) nitrate
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,9 mg/l End point: mortality Exposure time: 7 d Species: Pimephales promelas (fathead minnow) Test Type: semi-static test Analytical monitoring: yes Method: US-EPA GLP: yes Remarks: (anhydrous substance) The value is given in analogy to the following substances: Cobalt (II) nitrate
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,02 mg/l End point: mortality Exposure time: 7 d Species: Ceriodaphnia dubia (water flea) Test Type: semi-static test Analytical monitoring: yes Method: US-EPA GLP: yes Remarks: (anhydrous substance) The value is given in analogy to the following substances: Cobalt (II) nitrate
M-Factor (Chronic aquatic toxicity)	:	1

12.2 Persistence and degradability

Components:

Cobaltous nitrate, hexahydrate:

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

12.3 Bioaccumulative potential

Components:

Cobaltous nitrate, hexahydrate:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

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 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.

No data available

12.7 Other adverse effects

Product:

Additional ecological information : Hazard for drinking water supplies.

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of drinking- water supplies.

Discharge into the environment must be avoided.

Components:

Cobaltous nitrate, hexahydrate:

Additional ecological : Discharge into the environment must be avoided.

information

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 1477

IMDG : UN 1477

IATA : UN 1477

14.2 UN proper shipping name

ADR : NITRATES, INORGANIC, N.O.S.

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

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

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	5.1	
IMDG	5.1	
IATA	5.1	

14.4 Packing group

ADR

Packing group	:	II
Classification Code	:	O2
Hazard Identification Number	:	50
Labels	:	5.1
Tunnel restriction code	:	(E)

IMDG

Packing group	:	II
Labels	:	5.1
EmS Code	:	F-A, S-Q

IATA (Cargo)

Packing instruction (cargo aircraft)	:	562
Packing instruction (LQ)	:	Y544
Packing group	:	II
Labels	:	Division 5.1 - Oxidizing substances

IATA_P (Passenger)

Packing instruction (passenger aircraft)	:	558
Packing instruction (LQ)	:	Y544
Packing group	:	II
Labels	:	Division 5.1 - Oxidizing substances

14.5 Environmental hazards

ADR

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 28: Cobaltous nitrate, hexahydrate Number on list 30: Cobaltous nitrate, hexahydrate Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Cobaltous nitrate, hexahydrate
Regulation (EU) No 2024/590 on substances that deplete the ozone layer	:	Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	P8	OXIDIZING LIQUIDS AND SOLIDS
	E1	ENVIRONMENTAL HAZARDS

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Abbreviation and Acronyms

CAS - Chemical Abstracts Service
TSCA - United States Toxic Substances Control Act Section 8(b)Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non- Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
IECSC - 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
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
MARPOL - International Convention for the Prevention of Pollution from Ships
OECD - Organization for Economic Co-operation and Development
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
VOC - (Volatile Organic Compound)

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
Ryze Chemie will not be held liable for any damage resulting from handling or from contact with the above product

End of safety data sheet