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Safety Data Sheet

1. Chemical product and company identification

Product name : Cobalt(Ⅱ) nitrate hexahydrate

Company information

Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	07408
Recommended use	:	For research use only
Restrictions on use	:	Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Respiratory sensitization	Category 1
	Skin sensitization	Category 1
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (repeated exposure)	Category 1 (respiratory organs, heart)

Hazard pictograms

Signal word : Danger

Hazard statements : May cause an allergic skin reaction
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Suspected of causing cancer
May damage fertility or the unborn child
Causes damage to organs (respiratory organs, heart) through prolonged or repeated exposure

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
[In case of inadequate ventilation] wear respiratory protection.

Response	:	IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. Take off contaminated clothing and wash it before reuse.
Storage	:	Store locked up.
Disposal	:	Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Cobalt(Ⅱ) nitrate hexahydrate	≥ 97	Co(NO3)2・6H2O	Listed	233-402-1	10026-22-9

4. First aid measures

First aid measures

First-aid measures after inhalation	:	Remove the victim to fresh air, and make him blow his nose and gargle.
First-aid measures after skin contact	:	Wash the affected areas under running water.
First-aid measures after eye contact	:	Wash the affected areas under running water.
First-aid measures after ingestion	:	Give the victim water or salt water and make him vomit. Get medical attention.
Personal Protection in First Aid and Measures	:	Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media	:	This product is noncombustible.
Unsuitable extinguishing media	:	None
Fire hazard	:	Contact with combustible material may cause fire.
Firefighting instructions	:	Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures	:	Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate

people downwind.

Environmental precautions

Environmental precautions	:	Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment	:	Sweep up in a chemical waste container. Flush contaminated area with copious amounts of water.

7. Handling and storage

Handling

Technical measures	:	Wear appropriate protective equipment to avoid contact with skin or inhalation of dust.
Precautions for safe handling	:	Avoid formation of dust and aerosols. The substance is an oxdizer. Avoid contact with organic substances.

Storage

Storage conditions	:	As the chemical is deliquescent, keep the bottle tightly closed and store in a cool place. Keep away from combustible matrials.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	0.02 mg/m³ (I) (as Co)

Appropriate engineering controls	:	Install a local ventilation system in case of dusty condition.

Protective equipment

Respiratory protection	:	If necessary, wear dust mask
Hand protection	:	Impervious protective gloves
Eye protection	:	Safety goggles
Skin and body protection	:	Protective clothing, protective boots

9. Physical and chemical properties

Physical state	:	Solid
Color	:	Reddish brown
Odor	:	Odorless
pH	:	≥ 3 (50g/L, 25℃)
Melting point	:	56 ° C
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	74 ° C

Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative density	:	1.872 (25/4℃)
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Organic solvents: Soluble in ethanol. Water: 57.2 % (0℃)
Partition coefficient n-octanol/water (log Pow)	:	No data available
Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	No data available
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	Has oxidative properties.
Chemical stability	:	Stable under normal conditions. Deliquescent.
Possibility of hazardous reactions	:	The mixture with powdery combustible materials may burn vigorously or explode by heating or shock.
Conditions to avoid	:	Light, heat, moisture.
Incompatible materials	:	Reducing substances, combustible materials.
Hazardous decomposition products	:	Nitrogen oxides, cobalt oxides.

11. Toxicological information

Acute toxicity (oral)	:	Classification not possible
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Classification not possible
Serious eye damage/irritation	:	Classification not possible
Respiratory sensitization	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. There is a report that bronchial asthma was reported in workers exposed to various forms of cobalt. Additionally, in Japan Society For Occupational Health, cobalt is classified into group 1 for respiratory tract sensitizer, but the following statement is found: "the substance and its compounds are included in the list of sensitizers, but all of them were recognized as sensitizers.". Therefore, the substance was classified into category 1.
Skin sensitization	:	May cause an allergic skin reaction In Japan Society For Occupational Health, cobalt is classified into group 1 for skin sensitizer, but the following statement is found: "the substance and its compounds are included in the list of sensitizers, but all of them were recognized as sensitizers.". Therefore, the substance was classified into category 1.
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	Suspected of causing cancer IARC classifies cobalt and cobalt compounds as group 2B (possibly carcinogenic to humans).

Reproductive toxicity	:	May damage fertility or the unborn child For water-soluble cobalt compounds including this substance, in an oral route, adverse effects on the male genetic organs and decreased fertilizing capacity are reported, and it is reported that teratogenicity was shown at doses without maternal toxicity. Therefore, it was classified into category 1B for this hazard class.
STOT-single exposure	:	Classification not possible As data for cobalt(Ⅱ) chloride, there is a report that depression of spontaneous activity, muscle tone and respiration were observed at 4.25 mg/kg in a rat oral gavage test. As effects of cobalt chloride in human, retrosternal chest pain, tinnitus, nausea and vomiting, nerve deafness, thyroid hyperplasia with tracheal compression and myxedema were reported. Additionally, there is a report that cobaltous chloride depress the production of erythrocytes and accidental intoxication in children may produce cyanosis, coma and death.
STOT-repeated exposure	:	Causes damage to organs (respiratory organs, heart) through prolonged or repeated exposure No data for the substance is available. However, there are many human case reports of effects on the lungs caused by inhalation exposure to cobalt (Risk assessment report of cobalt and cobalt compounds. Several studies reported lethal cardiomyopathy in people who consumed large quantities of beer with cobalt sulfate. Many animal experiments showed that lung disorder, cardiac disorder, effects on the respiratory tract, effects on the thymus, or effects on larynx were caused by inhalation exposure to cobalt metal, cobalt chloride or cobalt sulfate. Based on the above information, the substance was classified into category 1 (respiratory organs, heart).
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Classification not possible
Aquatic chronic	:	Classification not possible

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Roasting method : Recover metal cobalt by roast reduction method. Or entrust approved waste disposal companies with the disposal.

<Note>
＊In case of disposal by roasting method, it is desirable to entrust to disposal companies.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Transport hazard class(es) (IMDG)	:	Not applicable

Air transport(IATA)

UN-No. (IATA)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable
Packing group (IATA)	:	Not applicable
Transport hazard class(es) (IATA)	:	Not applicable
Marine pollutant	:	Not applicable

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.