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Safety Data Sheet

1. Chemical product and company identification

Product name : Cobalt(Ⅱ) acetylacetonate dihydrate

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 : 07764

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	Acute toxicity (oral)	Category 4
	Serious eye damage/eye irritation	Category 1
	Skin sensitization	Category 1
	Carcinogenicity	Category 2

Hazard pictograms

Signal word : Danger

Hazard statements : Harmful if swallowed
May cause an allergic skin reaction
Causes serious eye damage
Suspected of causing cancer

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
Avoid breathing 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.

Response : IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF ON SKIN: Wash with plenty of water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER or doctor.
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/attention.
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) acetylacetonate dihydrate	≥ 95	C10H14CoO4・2H2O	Listed	237-855-6	14024-48-7

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 for at least 15 minutes. Get medical treatment.

First-aid measures after ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : Dry chemical, CO2, dry sand, or alcohol-resistant foam

Unsuitable extinguishing media : Water spray, Foam extinguisher

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.

Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Foam extinguisher is effective for a large scale fire.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

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 damage to the environment by flowing of spillage to rivers.

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.

Storage

Storage conditions	:	Store in a dark, cool place and tightly closed.
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established

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	:	Bright orange - Dark red
Odor	:	Odorless
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Flammable solid
Vapor pressure	:	No data available
Relative density	:	No data available
Density	:	No data available
Relative gas density	:	No data available

Solubility	:	Decomposes by water.
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	:	May react with oxidizing substances.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable under normal conditions of use.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Oxidizing substances.
Hazardous decomposition products	:	Carbon monoxide, cobalt oxides.

11. Toxicological information

Acute toxicity (oral)	:	Harmful if swallowed rat LD50=300-2000mg/kg (as anhydrous form)
Acute toxicity (dermal)	:	No classification rat LD50>2000mg/kg (as anhydrous form)
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) No classification (dust, mist) rat LC50>5.09mg/L/4h (as anhydrous form)
Skin corrosion/irritation	:	No classification In acute dermal irritation / corrosion test using rabbits (OECD TG404), it was reported that very slight irritation was observed.
Serious eye damage/irritation	:	Causes serious eye damage In acute eye irritation / corrosion test using rabbits (OECD TG405), it has been reported that "conjunctival score 3 and chemosis score 4" in 1 hour and "conjunctival score 3 and chemosis score 4" in 24 hours.
Respiratory sensitization	:	Classification not possible Besides, cobalt and its compounds were classified as "group 1 for respiratory tract sensitizer" by Japan Society for Occupational Health, but all substances in this compound group were not identified.
Skin sensitization	:	May cause an allergic skin reaction In the LLNA method using mice (OECD TG429), it has been reported that the SI value was 3 or more at all doses (0.05, 0.1, 0.5, 1%). In addition, cobalt and its compounds were classified as "group 1 for skin sensitizer" by Japan Society for Occupational Health, but all substances in this compound group were not identified. Thus, it was classified into category 1.
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	Suspected of causing cancer There are no test results for this substance itself. Cobalt and cobalt compounds are classified in group 2B by IARC, A3 by ACGIH, group 2B by Japan Society For Occupational Health, and R by NTP. Therefore, this substance was classified into category 2.

Reproductive toxicity	:	Classification not possible Besides, soluble cobalt compounds are classified into category 1B because they have reproductive effects due to male reproductive organ toxicity and developmental effects including malformations at doses that do not show maternal animal toxicity.
STOT-single exposure	:	Classification not possible Besides, cobalt is classified into category 1 (respiratory organs). Cobalt : It has been reported that healthy volunteers inhaled cemented carbide dust containing an average of 0.038 mg/m3 of this substance for 6 hours and experienced a transient decrease in ventilation that may have been caused by the irritant properties. It has also been reported that in workers exposed to cemented carbide dust, an obstructive disturbance of the airways occurred at an average cobalt concentration of 0.126 mg/m3, and obstruction of the airways and irritation symptoms occurred at 0.06 mg/m3. In addition, it has been reported that in a single inhalation exposure study of this substance in rats, 0.05 mg/L/4 hours caused death in all cases by day 11, and inflammatory edema with neutrophilic granulocytes, lymphocytes, and histiocytes around pulmonary vessels, and interstitial pneumonia were observed. Thus, it was classified into category 1 (respiratory organs).
STOT-repeated exposure	:	Classification not possible Besides, cobalt is classified into category 1 (respiratory organs, heart, thyroid, blood, reproductive organs (male)). Cobalt : In a study of cobalt smelter workers, dyspnea, wheezing, increased white blood cell count, decreased thyroid hormone T3, red blood cell count, hemoglobin concentration, and hematocrit levels, and increased incidence of abnormal thyroid hormone, cardiac-type creatine kinase activity, white blood cell count and red blood cell count were reported. In a 14-week inhalation exposure study of this substance in mice, lung infiltration, vacuolar degeneration of bronchioles, and squamous metaplasia of the pharynx were observed at 0.000625 mg/L or higher, degeneration of olfactory and respiratory epithelium at 0.00125 mg/L or higher, hyperplasia of bronchioles and respiratory epithelium, and squamous metaplasia of the respiratory epithelium at 0.0025 mg/L or higher, brown lung, alveolar proteinosis, pulmonary megakaryocytes, nasal atrophy, pulmonary hemorrhage, pneumonia, and rhinitis at 0.005 mg/L or higher were observed. In males, decreased sperm motility at 0.0025 mg/L or higher, decreased testicular weight and decreased sperm activity at 0.005 mg/L or higher, and testicular degeneration, cytoplasmic vacuolar degeneration of the epididymis, decreased spermatozoa, and germ cell detachment at 0.01 mg/L or higher were further observed. Thus, it was classified into category 1 (respiratory organs, heart, thyroid, blood, reproductive organs (male)).
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 dangeroous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) . 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.