Issue date: 7/25/2003
Revision date: 7/4/2024

Safety Data Sheet

1. Chemical product and company identification

Product name	:	Nickel(Ⅱ) chloride 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	:	28115
Product numbers applied by the SDS	:	28115, 28210
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 3
	Respiratory sensitization	Category 1
	Skin sensitization	Category 1
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (repeated exposure)	Category 2 (lung)
Environmental hazards	Aquatic acute	Category 3

Hazard pictograms

Signal word	:	Danger
Hazard statements	:	Toxic if swallowed May cause an allergic skin reaction May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer May damage fertility or the unborn child May cause damage to organs (lung) through prolonged or repeated exposure Harmful to aquatic life

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.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
[In case of inadequate ventilation] wear respiratory protection.

Response : IF SWALLOWED: Immediately call a POISON CENTER or doctor.
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.
Rinse mouth.
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
Nickel(Ⅱ) chloride hexahydrate	≥ 97	NiCl2· 6H2O	Listed	231-743-0	7791-20-0

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

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.
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 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. Neutralize residue with calcium hydroxide or sodium carbonate water solution and then flush contaminated area with copious amounts of water.

7. Handling and storage

Handling

Technical measures	:	If necessary, wear proper protective equipment to avoid contact with skin or inhalation of dust.
Precautions for safe handling	:	Avoid formation of dust and aerosols.

Storage

Storage conditions	:	Keep the bottle tightly closed and store in a cool place (below 30 ℃).
Material used in packaging/containers	:	Glass, polyethylene, polypropylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	0.1 mg/m³ (I) (as Ni)

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	:	Green - dark blue-green
Odor	:	Odorless

pH	:	Acidity
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	:	28.8 ° C (Transition temperature (hexahydrate → tetrahydrate))
Flammability	:	Non flammable.
Vapor pressure	:	No data available
Relative density	:	1.921
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Organic solvents: Easily soluble in ethanol. Water: 40 % (26℃)
Partition coefficient n-octanol/water (log Pow)	:	No data available
Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	No data available
Particle characteristics	:	Particle size distribution:< 0.1 % (particle size ≤ 0.1 mm)

10. Stability and reactivity

Reactivity	:	May react with oxidizing substances.
Chemical stability	:	Stable under normal conditions. Deliquescent.
Possibility of hazardous reactions	:	Stable under normal conditions of use.
Conditions to avoid	:	Light, heat, moisture.
Incompatible materials	:	Oxidizing substances.
Hazardous decomposition products	:	Chlorine, hydrogen chloride, nickel oxide.

11. Toxicological information

Acute toxicity (oral)	:	Toxic if swallowed rat LD50=175 mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Classification not possible
Serious eye damage/irritation	:	Classification not possible May cause eye irritation.
Respiratory sensitization	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Nickel compounds are classified into airway sensitizers (group 2) by Japan Society for Occupational Health's recommendation of occupational exposure limits.
Skin sensitization	:	May cause an allergic skin reaction Nickel compounds are classified into skin sensitizer (group 1) by Japan Society for Occupational Health's recommendation of occupational exposure limits.

Germ cell mutagenicity	:	Classification not possible As for in vivo tests, there are positive data on chromosome aberration tests in mouse and hamster bone-marrow cells, micronucleus assay in mouse bone marrow cells, DNA damage test in mouse leukocytes, DNA breakage assays in rat liver. However, mouse bone marrow cell micronucleus assay was negative.
Carcinogenicity	:	May cause cancer IARC classifies nickel compounds as group 1(carcinogenic to humans).
Reproductive toxicity	:	May damage fertility or the unborn child In two-generation reproductive toxicity studies and one-generation reproductive toxicity studies in rats by oral route, fetal deaths were observed at dosing levels lower than doses toxic to parent animals. Thus, it was classified into category 1B.
STOT-single exposure	:	Classification not possible As relevant information, in oral administration studies with nickel chloride (anhydrous) in rats, with the dose of the guidance value range of category 2, "excitement, increased motor activity, followed by nervous system depression were observed." Thus, it was classified into category 2 (nervous system).
STOT-repeated exposure	:	May cause damage to organs (lung) through prolonged or repeated exposure In a 90-day oral administration test in rats by gavage, fatal cases were reported dose-dependently with the dose of the guidance value range of category 2, and lethargy and irregular respiration were observed as symptoms prior to death. In the mid dose group, lung inflammation and atrophy of alveolar epithelial cells were observed. Respiratory depression due to adverse pulmonary effects is considered to cause the symptoms and death. Thus, it was classified into category 2 (lung).
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Harmful to aquatic life Oryzias latipes LC50=11 mg/L/96h (as nickel(Ⅱ) chloride)
Aquatic chronic	:	No classification Oryzias latipes NOEC=1.1 mg/L/43-day (as nickel(Ⅱ) chlride)

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	:	Disposal should be made by one of following methods. Or entrust approved waste disposal companies with the disposal.

Precipitation method :
Dissolve in water and add calcium hydroxide or sodium carbonate solution to precipitate. Filter the precipitation and bury in a landfill site approved for hazardous waste disposal. The supernatant liquid is flushed in a drain after neutralizing.

Roasting method :
In case of a large amount of the chemical, recover metal nickel by roast reduction method.

<Note>
＊The pH of the neutralization should be above 8.5. The precipitation does not form completely below pH 8.5.
＊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)	:	3288
Proper Shipping Name (IMDG)	:	TOXIC SOLID, INORGANIC, N.O.S.
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	6.1

Air transport(IATA)

UN-No. (IATA)	:	3288
Proper Shipping Name (IATA)	:	Toxic solid, inorganic, n.o.s.
Packing group (IATA)	:	III
Transport hazard class(es) (IATA)	:	6.1
Marine pollutant	:	Not applicable
MFAG-No	:	151

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) .
Dangerous Properties of Industrial Materials,6th ed. N.I.Sax Van Nostrand Reinhold Company (1984) .
Handbook of 17625 Chemical Products, The Chemical Daily Co. (2025) .
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.