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Safety Data Sheet

1. Chemical product and company identification

Product name : Nickel, cube, 5N

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	:	28719
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
	Specific target organ toxicity (single exposure)	Category 1 (respiratory organs, kidney)
	Specific target organ toxicity (repeated exposure)	Category 1 (respiratory organs)

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
Causes damage to organs (respiratory organs, kidney)
Causes damage to organs (respiratory organs) 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: Call a POISON CENTER or doctor.
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
Nickel	≥ 99.99	Ni	Listed	231-111-4	7440-02-0

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately get medical treatment.

First-aid measures after skin contact : Remove contaminated clothing and the substance. Wash with plenty of water. If skin irritation or rash occurs, get medical attention.

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) : Wear breathing apparatus.

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 the chemical and place in a chemical waste container.

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.
Do not allow contact with acids or oxidizing substances.

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	1.5 mg/m³ (I)

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

Protective equipment

Respiratory protection : 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 : Silver

Odor : Odorless

pH : No data available

Melting point : 1455 ° C

Freezing point : No data available

Boiling point : 2730 ° C

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability : Not flammable.

Vapor pressure	:	No data available
Relative density	:	8.908
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Water: Insoluble.
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	:	Reacts when heated with chlorine and bromine. It also combines with phosphorus, arsenic, and antimony. Fine powders catalyze the hydrogenation of alkenes and ketones.
Chemical stability	:	Stable under normal conditions. Oxidized gradually in air.
Possibility of hazardous reactions	:	When made into a fine powder, it is easily oxidized and may spontaneously ignite.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Acids, oxidizing substances.
Hazardous decomposition products	:	fume.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50>9000 mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) No classification (vapor) Classification not possible (dust, mist) Classification not possible due to lack of animal test data. As relevant information, there is a human case report in which an individual died of respiratory distress syndrome 13 days after a 90-minute exposure to a very high concentration of the substance (estimated 382 mg Ni/m3).
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. The substance is classified into group 2 for respiratory tract sensitizer in Japan Society For Occupational Health, and as respiratory tract sensitizer by Japanese Society of Occupational and Environmental allergy and DFG. Based on these information, the substance was classified into category 1.
Skin sensitization	:	May cause an allergic skin reaction There are human case reports of eczema, contact dermatitis and positive results in patch tests. In addition, the substance is classified into group 1 for skin sensitizer by Japan Society For Occupational Health, and as a skin sensitizer by Japanese Society of Occupational and Environmental allergy and DFG. Based on the available information, the substance was classified into category 1.

Germ cell mutagenicity	:	Classification not possible Although there is a positive result in an alveolar macrophage chromosomal aberration test by inhalation exposure to tars, the experimental procedures employed are not commonly used. Therefore, classification was not possible due to lack of sufficient data from in vivo mutagenicity tests. As relevant information, from in vitro mutagenicity tests, there are reports of negative human lymphocyte chromosomal aberration test and human lymphoblast TK6 gene mutation test.
Carcinogenicity	:	Suspected of causing cancer Based on the classifications of "2B" in IARC, "R" in NTP and "Carcinogenicity. Category 3; R40" in EU classification, the substance was classified into category 2. Occurrence of carcinoma and sarcoma is reported in inhalation, subcutaneous, intramuscular, intrathoracic and intraperitoneal administration tests in rats.
Reproductive toxicity	:	Classification not possible There is a report that when rats were exposed to the substance in drinking water for 7 months before pregnancy and during pregnancy, a slight increase in pre-implantation mortality was found and some cases of malformed fetuses were noted. The rat test data was not used for classification purposes since the test details are unknown.
STOT-single exposure	:	Causes damage to organs (respiratory organs, kidney) In an inhalation test in male rats, cytotoxicity in the alveolar epithelial cells was observed at 0.5 mg and higher concentrations. Inhalation exposure of humans induced "alveolar wall damage and edema in alveolar spaces in the lung and marked tubular necrosis in the kidney". Based on the data, the substance was classified into category 1 (respiratory organs, kidney).
STOT-repeated exposure	:	Causes damage to organs (respiratory organs) through prolonged or repeated exposure It was reported that a high risk of mortality from respiratory disease is found among workers exposed occupationally to nickel oxides and metal nickel at concentrations of 0.04 mg/m3 and higher. In addition, rhinitis, sinusitis, nasal septal perforations and dysplasia of the nasal mucosa were reported in nickel refinery and nickel plating workers. Based on the data, the substance was classified into category 1 (respiratory organs). In a 13-week inhalation exposure test in rats (OECD TG413), pulmonary alveolar proteinosis and glanuromatous inflammation in the lung were observed in females, and mononuclear cell infiltration in the lung was observed in males at a concentration of 1 mg/m3, which falls within the guidance value range for category 1, and higher levels. In a 21-month inhalation exposure test in rats, pleuritis, pneumonia, congestion and edema were observed at a dose level of 15 mg/m3 which is within the guidance value range for category 1.
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 : Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Or entrust approved waste disposal companies with the disposal.

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 : NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) .
Handbook of dangeroous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001) .

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.