

# SAFETY DATA SHEETS

According to the UN GHS revision 10

Version: 1.1  
Creation Date: July 15, 2024  
Revision Date: February 11, 2025

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name NICKEL CARBONYL

### 1.2 Other means of identification

Product number CCNP900181

Other names NICKEL CARBONYL; nicheltetracarbonile; Nickel carbonyl

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

### 1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

### 1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Flammable liquids, Category 2

Acute toxicity - Category 2, Inhalation

Carcinogenicity, Category 2

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

Reproductive toxicity, Category 1B

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour

H330 Fatal if inhaled

H351 Suspected of causing cancer

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Prevention</b> | <p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P233 Keep container tightly closed.</p> <p>P240 Ground and bond container and receiving equipment.</p> <p>P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.</p> <p>P242 Use non-sparking tools.</p> <p>P243 Take action to prevent static discharges.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...</p> <p>P260 Do not breathe dust/fume/gas/mist/vapours/spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P284 [In case of inadequate ventilation] wear respiratory protection.</p> <p>P203 Obtain, read and follow all safety instructions before use.</p> <p>P273 Avoid release to the environment.</p> |
| <b>Response</b>   | <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].</p> <p>P370+P378 In case of fire: Use ... to extinguish.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P316 Get emergency medical help immediately.</p> <p>P320 Specific treatment is urgent (see ... on this label).</p> <p>P318 IF exposed or concerned, get medical advice.</p> <p>P391 Collect spillage.</p>                                                                                                                                                                                                                                                                                                                               |
| <b>Storage</b>    | <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Disposal</b>   | <p>P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

### 2.3 Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Chemical name   | Common names and synonyms | CAS number | EC number | Concentration |
|-----------------|---------------------------|------------|-----------|---------------|
| NICKEL CARBONYL | Tetracarbonylnickel       | 13463-39-3 | 236-669-2 | ≈ 99%         |

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer immediately for medical attention.

#### Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again. Refer for medical attention .

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Refer for medical attention .

### 4.2 Most important symptoms/effects, acute and delayed

no data available

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

### 5.2 Specific hazards arising from the chemical

Highly flammable. Risk of fire and explosion on heating above 60°C. Vapour/air mixtures are explosive. Liquid and vapour flash in direct sunlight.

### 5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Remove all ignition sources. Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### 6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. NO contact with oxidizing agents. Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants, strong acids and food and feedstuffs. Cool. Keep in the dark. Keep under inert gas. Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

TLV: 0.05 ppm as STEL; A3 (confirmed animal carcinogen with unknown relevance to humans)

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

#### Skin protection

Protective gloves. Protective clothing.

#### Respiratory protection

Use closed system or ventilation.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties and safety characteristics

**Physical state** colourless liquid with a musty odour

**Colour** no data available

**Odour** no data available

**Melting point/freezing point** -19°C

**Boiling point or initial boiling point and boiling range** 43°C

**Flammability** no data available

**Lower and upper explosion limit/flammability limit** no data available

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|                                       |                                       |
|---------------------------------------|---------------------------------------|
| Flash point                           | <-20°C                                |
| Auto-ignition temperature             | 60°C                                  |
| Decomposition temperature             | no data available                     |
| pH                                    | no data available                     |
| Kinematic viscosity                   | no data available                     |
| Solubility                            | 0.02 g/l(practically insoluble)(20°C) |
| Partition coefficient n-octanol/water | no data available                     |
| Vapour pressure                       | 53 kPa(25.8°C)                        |
| Density and/or relative density       | 1.32g/cm <sup>3</sup>                 |
| Relative vapour density               | no data available                     |
| Particle characteristics              | no data available                     |

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible. May explode on heating above 60°C. The substance may ignite spontaneously on contact with air. Decomposes on contact with acids. This produces highly toxic carbon monoxide (see ICSC 0023). Reacts violently with oxidants. This generates fire and explosion hazard. Oxidizes in air forming deposits which become peroxidized causing fire hazard.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The vapour is irritating to the respiratory tract. Inhalation of the vapour may cause lung oedema. The effects may be delayed. Medical observation is indicated. See Notes. The substance may cause effects on the lungs and central nervous system. This may result in muscle weakness, delirium and convulsions. The effects may be delayed. Exposure could cause death.

### STOT-repeated exposure

The substance may have effects on the nervous system. This may result in impaired functions. This substance is carcinogenic to humans if inhaled. May cause toxicity to human reproduction or development.

### Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

## SECTION 12: Ecological information

### 12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: UN1259 (For reference only, please check.) IMDG: UN1259 (For reference only, please check.) IATA: UN1259 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID: NICKEL CARBONYL (For reference only, please check.) IMDG: NICKEL CARBONYL (For reference only, please check.) IATA: NICKEL CARBONYL (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (For reference only, please check.)

### 14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.) IMDG: I (For reference only, please check.) IATA: I (For reference only, please check.)

### 14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name                                                          | Common names and synonyms | CAS number | EC number |
|------------------------------------------------------------------------|---------------------------|------------|-----------|
| Tetracarbonylnickel                                                    | Tetracarbonylnickel       | 13463-39-3 | 236-669-2 |
| European Inventory of Existing Commercial Chemical Substances (EINECS) |                           |            | Listed.   |

|                                                                          |             |
|--------------------------------------------------------------------------|-------------|
| EC Inventory                                                             | Listed.     |
| United States Toxic Substances Control Act (TSCA) Inventory              | Listed.     |
| China Catalog of Hazardous chemicals 2015                                | Listed.     |
| New Zealand Inventory of Chemicals (NZIoC)                               | Not Listed. |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS)       | Listed.     |
| Vietnam National Chemical Inventory                                      | Listed.     |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) | Not Listed. |
| Korea Existing Chemicals List (KECL)                                     | Listed.     |

## SECTION 16: Other information

### Information on revision

|               |                   |
|---------------|-------------------|
| Creation Date | July 15, 2024     |
| Revision Date | February 11, 2025 |

### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Other Information

Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorized by him/her, should be considered. Rest and medical observation are therefore essential. The odour warning when the exposure limit value is exceeded is insufficient. Rinse contaminated clothing with plenty of water because of fire hazard.

**Any questions regarding this SDS, Please send your inquiry to [info@cato-chem.com](mailto:info@cato-chem.com)**

*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*