

Safety Data Sheet

according to 29 CFR 1910.1200(g)

Loading solution

Revision date: 12/08/2022

Product code:

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1. Identification

Product identifier

Loading solution

Further trade names

This product is part of a kit.

Included in the following article: HK-NHS-5, HK-NTA-1, PF-NH2-2-B48, HK-NHS, CK-TN-X

Recommended use of the chemical and restrictions on use

Use of the substance/mixture

Use as laboratory reagent.

The product is intended for research, analysis and scientific education.

Uses advised against

Any non-intended use.

Details of the supplier of the safety data sheet

Company name:	Dynamic Biosensors Inc.	
Street:	300 Trade Center, Suite 1400	
Place:	USA-01801 Woburn, MA	
Telephone:	+1 781 404 6126	
Responsible Department:	Dr. Gans-Eichler	e-mail: info@tge-consult.de
	Chemieberatung GmbH	Tel.: +49(0)2534 6441185
	Otto-Hahn-Str. 36	www.tge-consult.de
	D-48161 Münster	

Emergency phone number: CONTACT (24-Hour-Number): GBK GmbH 01149-6132-84463

Further Information

No information available.

2. Hazard(s) identification

Classification of the chemical

29 CFR Part 1910.1200

Respiratory or skin sensitization: Resp. Sens. 1

Respiratory or skin sensitization: Skin Sens. 1

Carcinogenicity: Carc. 1A

Reproductive toxicity: Repr. 1B

Label elements

29 CFR Part 1910.1200

Signal word: Danger

Pictograms:



Hazard statements

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

Precautionary statements

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

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Avoid breathing dust/fume/gas/mist/vapors/spray.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Wear respiratory protection.
 If on skin: Wash with plenty of soap and water.
 Wash contaminated clothing before reuse.
 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
 If experiencing respiratory symptoms: Call a poison center/doctor.
 If exposed or concerned: Get medical advice/attention.
 Store locked up.
 Dispose of contents/container to local/regional/national/international regulations.

Special labelling of certain mixtures

Restricted to professional users.

Hazards not otherwise classified

No information available.

3. Composition/information on ingredients

Mixtures

Chemical characterization

Laboratory chemicals

Hazardous components

CAS No	Components	Quantity
7718-54-9	nickel dichloride	< 1 %

4. First-aid measures

Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Remove casualty to fresh air and keep warm and at rest. Call a physician immediately.
 In the case of lung irritation: Primary treatment using corticoide spray, eg. Auxiloson spray, Pulmicort-dosage-spray. (Auxiloson and Pulmicort are registered trademarks).
 In case of breathing difficulties administer oxygen.

After contact with skin

After contact with skin, wash immediately with: Water and soap. Remove contaminated, saturated clothing immediately. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse cautiously with water for several minutes. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

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Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂) Dry extinguishing powder. alcohol resistant foam. Atomized water.

Unsuitable extinguishing media

High power water jet.

Specific hazards arising from the chemical

Can be released in case of fire: Gas/vapors, harmful. Hydrogen chloride (HCl), metal oxide smoke.

Special protective equipment and precautions for fire-fighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Co-ordinate fire-fighting measures to the fire surroundings.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

General advice

Wear personal protection equipment. refer to chapter 8

Ventilate affected area. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Environmental precautions

Do not allow to enter into surface water or drains. Eliminate leaks immediately. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Methods and material for containment and cleaning up

Other information

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Treat the recovered material as prescribed in the section on waste disposal.

Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Use extractor hood (laboratory).

Wear suitable protective clothing. (See section 8.)

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Always close containers tightly after the removal of product. Do not eat, drink, smoke or sneeze at the workplace. After work, wash hands and face. Wash contaminated clothing prior to re-use. Street clothing should be stored separately from work clothing.

Further information on handling

General protection and hygiene measures: refer to chapter 8

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Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.

Hints on joint storage

Do not store together with: Explosives. Gas. Oxidizing liquids. Oxidizing solids. Self-reactive substances and mixtures. Organic peroxides. Ammonium nitrate. Combustible toxic substances. Non-combustible toxic substances. Radioactive substances.. Infectious substances.

Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Recommended storage temperature: -20°C

Protect against: frost. UV-radiation/sunlight. heat. Humidity

8. Exposure controls/personal protection

Control parameters

Exposure limits

CAS No	Substance	ppm	mg/m ³	f/cc	Category	Origin
7440-02-0	Nickel metal and other compounds (as Ni)	0.015	-		TWA (8 h)	REL
7440-02-0	Nickel, soluble compounds (as Ni)	-	1		TWA (8 h)	PEL

Exposure controls



Appropriate engineering controls

Use extractor hood (laboratory).

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Provide adequate ventilation as well as local exhaust at critical locations.

Process within closed systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Recommended eye protection brand: Tightly sealed safety glasses. Standards: EN 166 or 29 CFR 1910.133

Hand protection

Wear suitable gloves.

Suitable material:

FKM (fluororubber). - Thickness of the glove material 0,4 mm

Breakthrough time >= 8 h

Butyl rubber. - Thickness of the glove material 0,5 mm

Breakthrough time >= 8 h

CR (polychloroprenes, Chloroprene rubber). - Thickness of the glove material 0,5 mm

Breakthrough time >= 8 h

NBR (Nitrile rubber). - Thickness of the glove material 0,35 mm

Breakthrough time >= 8 h

PVC (Polyvinyl chloride). - Thickness of the glove material 0,5 mm

Breakthrough time >= 8 h

The selected protective gloves should satisfy the specifications of standards like EN 374.

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

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Skin protection

Suitable protective clothing: Lab apron.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

Exceeding exposure limit values

Generation/formation of aerosols

Suitable respiratory protection apparatus: Particulate Respirators, Standard: 42 CFR Part 84, Filter: R/N/P-100

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	liquid
Color:	colourless
Odor:	characteristic

Changes in the physical state

Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	not determined
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
Flash point:	not determined

Explosive properties

none

Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature:	not determined

Self-ignition temperature

Gas: not determined

Decomposition temperature: not determined

pH-Value: not determined

Viscosity / dynamic: not determined

Viscosity / kinematic: not determined

Flow time: not determined

Water solubility: not determined

Solubility in other solvents

not determined

Partition coefficient n-octanol/water: SECTION 12: Ecological information

Vapor pressure: not determined

Density: not determined

Relative vapour density: not determined

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Other information

Information with regard to physical hazard classes

Sustaining combustion: Not sustaining combustion
 Oxidizing properties
 none

Other safety characteristics

Solvent separation test: not determined
 Solvent content: not determined
 Solid content: not determined
 Evaporation rate: not determined

Further Information

10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stability: Stable

The product is chemically stable under recommended conditions of storage, use and temperature.

Possibility of hazardous reactions

Hazardous reactions: Will not occur

Refer to chapter 10.5.

Conditions to avoid

Protect against: UV-radiation/sunlight. heat.

Incompatible materials

Materials to avoid: Reducing agent. Oxidizing agents. Substances and mixtures which, in contact with water, emit flammable gases

Hazardous decomposition products

Can be released in case of fire: Gas/vapors, harmful. Hydrogen chloride (HCl), metal oxide smoke.

11. Toxicological information

Route(s) of Entry

Ingestion: May be Harmful. Inhalation: May produce an allergic reaction. Skin Contact: May produce an allergic reaction. Eye Contact: May cause Irritation. Chronic: May cause harm to the unborn child. May cause cancer.

Information on toxicological effects

Toxicokinetics, metabolism and distribution

No data available.

Acute toxicity

Based on available data, the classification criteria are not met.

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
7718-54-9	nickel dichloride				
	oral	LD50 mg/kg	175	Rat	ECHA Dossier OECD Guideline 401
	inhalation vapour	ATE	3 mg/l		
	inhalation dust/mist	ATE	0,5 mg/l		

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Irritation and corrosivity

Based on available data, the classification criteria are not met.

Sensitizing effects

May cause allergy or asthma symptoms or breathing difficulties if inhaled (nickel dichloride)

May cause an allergic skin reaction (nickel dichloride)

Carcinogenic/mutagenic/toxic effects for reproduction

May cause cancer (nickel dichloride)

May damage fertility or the unborn child (nickel dichloride)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Specific target organ toxicity (STOT) - single exposure

Based on available data, the classification criteria are not met.

Specific target organ toxicity (STOT) - repeated exposure

Based on available data, the classification criteria are not met.

Carcinogenicity (OSHA):

No Substance listed.

Carcinogenicity (IARC):

Nickel compounds is listed in group 1.

Carcinogenicity (NTP):

No ingredient of this mixture is listed.

Aspiration hazard

Based on available data, the classification criteria are not met.

Specific effects in experiment on an animal

No data available.

12. Ecological information

Ecotoxicity

The product has not been tested.

Persistence and degradability

The product has not been tested.

Bioaccumulative potential

No indication of bioaccumulation potential.

Mobility in soil

No data available.

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Other adverse effects

No data available.

Further information

Do not allow to enter into surface water or drains.

13. Disposal considerations

Waste treatment methods

Disposal recommendations

Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal.

Non-contaminated packages may be recycled.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

14. Transport information

US DOT 49 CFR 172.101

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Proper shipping name: Not a hazardous material with respect to these transport regulations.

Marine transport (IMDG)

UN number or ID number: Not restricted

UN proper shipping name: Not restricted

Transport hazard class(es): Not restricted

Packing group: Not restricted

Air transport (ICAO-TI/IATA-DGR)

UN number or ID number: Not restricted

UN proper shipping name: Not restricted

Transport hazard class(es): Not restricted

Packing group: Not restricted

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Special precautions for user

refer to chapter 6 - 8

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

15. Regulatory information

U.S. Regulations

National Inventory TSCA

All components are listed in the TSCA 8 (b) inventory as "active" or exempted.

nickel dichloride listed in the TSCA inventory 8 (b): (x) active ,not listed under TSCA 12(b)

National regulatory information

SARA Section 304 CERCLA:

Nickel chloride (7718-54-9): Reportable quantity = 100 (45.4) lbs. (kg)

SARA Section 311/312 Hazards:

Nickel chloride (7718-54-9): Delayed (chronic) health hazard, Immediate (acute) health hazard

SARA Section 313 Toxic release inventory:

Nickel chloride (7718-54-9): De minimis limit = 0.1 %, Reportable threshold = Standard

Clean Air Act Section 112(b):

Nickel chloride (7718-54-9)

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

WARNING: This product can expose you to chemicals including Nickel (insoluble compounds) (cancer), which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

This preparation is hazardous in the sense of regulation 29 CFR Part 1910.1200.

16. Other information

Hazardous Materials Information Label (HMIS)

Health: *2

Flammability: 0

Physical Hazard: 1

Personal Protection: B

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NFPA Hazard Ratings

Health: 1
 Flammability: 0
 Reactivity: 1
 Unique Hazard:



Changes

Revision date: 08.12.2022
 Revision No: 3,0
 Rev. 1.0; 01.09.2015, Initial release
 Rev. 1.1; 02.03.2016, Documentation of changes: Material no.: B-23-12. -> CK-TN-1-Y.
 Rev. 1.2; 13.03.2017, Documentation of changes: chapter: 1, 16.
 Rev. 2.0; 23.10.2020, Documentation of changes: chapter: 2, 3, 4, 6, 7, 8, 10, 11, 12,14,15, 16
 Rev. 3.0; 08.12.2022, Changes in chapter: 1,16

Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
 ASTM: American Society for Testing and Materials.
 ATE: acute toxicity estimate
 BCF: Bio concentration factor
 ECHA: European Chemicals Agency
 CAS: Chemical Abstracts Service
 CFR: Code of Federal Regulations
 DOT: Department of Transportation
 d: days
 EC50: Half maximal effective concentration
 EN: European Norm
 EPA: Environmental Protection Agency
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 h: hours
 HMIS: Hazardous Materials Identification System
 IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
 IBC: Intermediate Bulk Container
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 LOAEL: Lowest observed adverse effect level
 LOAEC: Lowest observed adverse effect concentration
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 MARPOL: marine pollution
 NOAEL: No observed adverse effect level
 NOAEC: No observed adverse effect concentration
 NTP: National Toxicology Program
 N/A: not applicable
 NFPA: National Fire Protection Association
 UN: United Nations
 OECD: Organisation for Economic Co-operation and Development
 OSHA: Occupational Safety and Health Administration
 PBT: Persistent bioaccumulative toxic
 RTECS: Registry of Toxic Effects of Chemical Substances
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
 SARA: Superfund Amendments and Reauthorization Act

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STEL: short-term exposure limits
TSCA: Toxic Substances Control Act
TWA: time weighted average
VOC: Volatile Organic Compounds

Other data

Classification according 29 CFR Part 1910.1200:- Classification procedure:
Health hazards: Calculation method.
Environmental hazards: Calculation method.
Physical hazards: On basis of test data and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)