

SAFETY DATA SHEET

Version 6.1
Revision Date 05/28/2017
Print Date 05/11/2019

1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Nickel(II) chloride hexahydrate

Product Number : 223387
Brand : SIGALD

CAS-No. : 7791-20-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Skin irritation (Category 2), H315
Respiratory sensitisation (Category 1), H334
Skin sensitisation (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Reproductive toxicity (Category 1B), H360
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)
H301 + H331 : Toxic if swallowed or if inhaled

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	: $\text{Cl}_2\text{Ni} \cdot 6\text{H}_2\text{O}$
Molecular weight	: 237.69 g/mol
CAS-No.	: 7791-20-0

Hazardous components

Component	Classification	Concentration
Nickel(II) chloride hexahydrate	Acute Tox. 3; Skin Irrit. 2; Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1A; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301 + H331, H315, H317, H334, H341, H350, H360, H372, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas, Nickel/nickel oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combu formation should be taken into consideration before additional processing. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Hygroscopic.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Nickel(II) chloride hexahydrate	7791-20-0	TWA	1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Lung damage Nasal cancer Not classifiable as a human carcinogen varies		
		TWA	0.015000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Lung damage Nasal cancer Not classifiable as a human carcinogen varies		
		TWA	0.015 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatri® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industria situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|------------------------------------|
| a) Appearance | Form: crystalline
Colour: green |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | ()Not applicable |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | No data available |
| n) Water solubility | No data available |
| o) Partition coefficient: n-octanol/water | No data available |
| p) Auto-ignition temperature | No data available |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | No data available |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Avoid moisture.

10.5 Incompatible materials

Strong oxidizing agents, Peroxides

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Nickel/nickel oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 105 mg/kg(Nickel(II) chloride hexahydrate)

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Olfaction:Other changes.

Behavioral:Somnolence (general depressed activity). Diarrhoea

Inhalation: No data available(Nickel(II) chloride hexahydrate)

Dermal: No data available(Nickel(II) chloride hexahydrate)

No data available(Nickel(II) chloride hexahydrate)

Skin corrosion/irritation

No data available(Nickel(II) chloride hexahydrate)

Serious eye damage/eye irritation

No data available(Nickel(II) chloride hexahydrate)

Respiratory or skin sensitisation

Germ cell mutagenicity

In vitro tests showed mutagenic effects(Nickel(II) chloride hexahydrate)

Human(Nickel(II) chloride hexahydrate)

HeLa cell

DNA damage

Hamster(Nickel(II) chloride hexahydrate)

fibroblast

Sister chromatid exchange

Mouse(Nickel(II) chloride hexahydrate)

mammary gland

Mutation in mammalian somatic cells.

Mouse(Nickel(II) chloride hexahydrate)

mammary gland

Cytogenetic analysis

(Nickel(II) chloride hexahydrate)

Rat

DNA damage

Carcinogenicity

This is or contains a component that has been reported to be carcinogenic classification.(Nickel(II) chloride hexahydrate)

Human carcinogen.(Nickel(II) chloride hexahydrate)
(Nickel(II) chloride hexahydrate)

IARC: 1 - Group 1: Carcinogenic to humans (Nickel(II) chloride hexahydrate)

IARC: 1 - Group 1: Carcinogenic to humans (Nickel(II) chloride hexahydrate)

NTP: Known to be human carcinogen (Nickel(II) chloride hexahydrate)

NTP: Known to be human carcinogen (Nickel(II) chloride hexahydrate)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Presumed human reproductive toxicant(Nickel(II) chloride hexahydrate)

No data available(Nickel(II) chloride hexahydrate)

Specific target organ toxicity - single exposure

No data available(Nickel(II) chloride hexahydrate)

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available(Nickel(II) chloride hexahydrate)

Additional Information

RTECS: QR6480000

Gastrointestinal disturbance, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Nickel(II) chloride hexahydrate)

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence(Nickel(II) chloride hexahydrate)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.51 mg/l - 48 h(Nickel(II) chloride hexahydrate)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available(Nickel(II) chloride hexahydrate)

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3288 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, inorganic, n.o.s. (Nickel(II) chloride hexahydrate) no
Poison Inhalation Hazard: No

IMDG

UN number: 3288 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hexahydrate)
Marine pollutant : yes

IATA

UN number: 3288 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, inorganic, n.o.s. (Nickel(II) chloride hexahydrate)

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Nickel(II) chloride hexahydrate	7791-20-0	1987-01-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Nickel(II) chloride hexahydrate	7791-20-0	2004-05-07

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Nickel(II) chloride hexahydrate	7791-20-0	2004-05-07

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H301	Toxic if swallowed.
H301 + H331	Toxic if swallowed or if inhaled
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956
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