

SAFETY DATA SHEET

Creation Date 04-Apr-2014

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Revision Number 4

1. Identification

Product Name Nickel Chloride Hexahydrate (Technical)

Cat No. : N53-500

CAS-No 7791-20-0
Synonyms Nickel dichloride.; Nickelous chloride

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number

CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 3
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1B
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Respiratory system.	

Label Elements

Signal Word

Danger

Hazard Statements

Toxic if swallowed
 Toxic if inhaled
 Causes skin irritation
 Causes serious eye irritation
 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 May cause an allergic skin reaction
 Suspected of causing genetic defects
 May cause cancer by inhalation
 May damage the unborn child
 Causes damage to organs through prolonged or repeated exposure



Precautionary Statements

Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 In case of inadequate ventilation wear respiratory protection
 Contaminated work clothing should not be allowed out of the workplace
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wear protective gloves/protective clothing/eye protection/face protection

Response

IF exposed or concerned: Get medical attention/advice

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician

Skin

IF ON SKIN: Wash with plenty of soap and water
 Take off contaminated clothing and wash before reuse
 If skin irritation or rash occurs: Get medical advice/attention

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects
 WARNING. Cancer - <https://www.p65warnings.ca.gov/>.

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Nickel(II) chloride hexahydrate (1:2:6)	7791-20-0	>95

Nickel(II) chloride	7718-54-9	-
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4. First-aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Most important symptoms and effects	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products

Hydrogen chloride gas Chlorine Burning produces obnoxious and toxic fumes

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	N/A

6. Accidental release measures

Personal Precautions	Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.
Environmental Precautions	Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Nickel(II) chloride hexahydrate (1:2:6)	TWA: 0.1 mg/m ³	(Vacated) TWA: 0.1 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.015 mg/m ³	TWA: 0.1 mg/m ³
Nickel(II) chloride	TWA: 0.1 mg/m ³	(Vacated) TWA: 0.1 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.015 mg/m ³	TWA: 0.1 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Green
Odor	Odorless
Odor Threshold	No information available
pH	4-6 5% aq.sol
Melting Point/Range	1001 °C
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 615.6 °C

Vapor Density	Not applicable
Specific Gravity	No information available
Bulk Density	&1.92 g/cm ³
Solubility	2540 g/l water (20°C)
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	
Decomposition Temperature	> 140°C
Viscosity	Not applicable
Molecular Formula	Cl ₂ Ni · 6 H ₂ O
Molecular Weight	237.71

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Avoid dust formation. Excess heat. Incompatible products.
Incompatible Materials	Strong acids, Peroxides, Metals
Hazardous Decomposition Products	Hydrogen chloride gas, Chlorine, Burning produces obnoxious and toxic fumes
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nickel(II) chloride hexahydrate (1:2:6)	LD50 = 105 mg/kg (Rat)	Not listed	Not listed
Nickel(II) chloride	LD50 = 175 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Irritating to eyes and skin
Sensitization	May cause sensitization by skin contact
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen. May cause cancer by inhalation.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Nickel(II) chloride hexahydrate (1:2:6)	7791-20-0	Group 1	Known	Not listed	X	Not listed
Nickel(II) chloride	7718-54-9	Group 1	Known	Not listed	X	Not listed

Mutagenic Effects Possible risk of irreversible effects

Reproductive Effects May cause harm to the unborn child.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure	None known
STOT - repeated exposure	Respiratory system
Aspiration hazard	No information available
Symptoms / effects, both acute and delayed	Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Nickel(II) chloride	EC50: 0.0063 - 0.0125 mg/L, 96h static (Pseudokirchneriella subcapitata) EC50: = 0.66 mg/L, 72h (Pseudokirchneriella subcapitata)	LC50: > 100 mg/L, 96h static (Brachydanio rerio) LC50: = 1.3 mg/L, 96h semi-static (Cyprinus carpio) LC50: 18.1 - 25.5 mg/L, 96h flow-through (Lepomis macrochirus) LC50: 2.02 - 6.88 mg/L, 96h static (Lepomis macrochirus) LC50: 6.7 - 9.7 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 6.63 - 9.15 mg/L, 96h static (Oncorhynchus mykiss) LC50: 1.9 - 4 mg/L, 96h (Pimephales promelas) LC50: 2.02 - 6.88 mg/L, 96h static (Pimephales promelas) LC50: = 25 mg/L, 96h flow-through (Pimephales promelas) LC50: = 9.65 mg/L, 96h flow-through (Poecilia reticulata) LC50: 29.76 - 43.57 mg/L, 96h semi-static (Poecilia reticulata) LC50: 2.83 - 5.99 mg/L, 96h static (Poecilia reticulata) LC50: = 6.9 mg/L, 96h static (Cyprinus carpio)	Not listed	EC50: = 6.68 mg/L, 48h (Daphnia magna) EC50: = 0.51 mg/L, 48h Static (Daphnia magna)

Persistence and Degradability Soluble in water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No	UN3288
Proper Shipping Name	TOXIC SOLID, INORGANIC, N.O.S.
Proper technical name	(NICKEL(II) CHLORIDE HEXAHYDRATE)
Hazard Class	6.1
Packing Group	III

TDG

UN-No	UN3288
Proper Shipping Name	TOXIC SOLID, INORGANIC, N.O.S.
Hazard Class	6.1
Packing Group	III

IATA

UN-No	UN3288
Proper Shipping Name	TOXIC SOLID, INORGANIC, N.O.S.
Hazard Class	6.1
Packing Group	III

IMDG/IMO

UN-No	UN3288
Proper Shipping Name	TOXIC SOLID, INORGANIC, N.O.S.
Hazard Class	6.1
Packing Group	III

15. Regulatory information

United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Nickel(II) chloride hexahydrate (1:2:6)	7791-20-0	-	-	-
Nickel(II) chloride	7718-54-9	X	ACTIVE	-

Legend:

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Nickel(II) chloride hexahydrate (1:2:6)	7791-20-0	-	-	-	X	X	X	X	-
Nickel(II) chloride	7718-54-9	X	-	231-743-0	X	X	X	X	KE-25837

U.S. Federal Regulations**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Nickel(II) chloride hexahydrate (1:2:6)	7791-20-0	>95	0.1
Nickel(II) chloride	7718-54-9	-	0.1

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Nickel(II) chloride hexahydrate (1:2:6)	-	-	X	-
Nickel(II) chloride	X	-	X	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Nickel(II) chloride hexahydrate (1:2:6)	X		-
Nickel(II) chloride	X		-

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Nickel(II) chloride	100 lb	-

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Nickel(II) chloride hexahydrate (1:2:6)	7791-20-0	Carcinogen Developmental Male Reproductive	-	Developmental Carcinogen
Nickel(II) chloride	7718-54-9	Carcinogen Developmental Male Reproductive	-	Developmental Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Nickel(II) chloride hexahydrate (1:2:6)	-	X	X	X	X
Nickel(II) chloride	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

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Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS