



MARTRON INC. SAFETY DATA SHEET MARTRON NICKEL CHLORIDE

Section 1: IDENTIFICATION

Product Name	MARTRON NICKEL CHLORIDE
Product Number	MFC-002014
Other Names	Nickel (II) Chloride, Nickelic Chloride, Nickel Dichloride
Recommended Use and Restrictions	Component in electroplating solutions
Supplier Name	Martron Inc. 1394-A Walkup Ave. Monroe, NC 28110 704-289-1934
Website	www.martroninc.net
Emergency Number	CHEMTREC 800-424-9300

Section 2: HAZARD IDENTIFICATION

GHS Classifications	
Acute Toxicity (Oral)	Category 4
Acute Toxicity (Inhaled)	Category 4
Carcinogenicity	Category 1A
Sensitization – Skin	Category 1
Sensitization – Respiratory	Category 1
Reproductive Toxicity	Category 2
Specific Target Organ Toxicity – Single Dose	Category 2
Specific Target Organ Toxicity – Repeated Dose	Category 2

Supplemental	
Acute Aquatic Toxicity	Category 1
Chronic Aquatic Toxicity	Category 1

Hazards Not Otherwise Classified (HNOC)
Not classified

Labeling



Signal Word
Danger

Hazard Statements

Harmful if swallowed.
Harmful if inhaled.
May cause cancer.
May cause an allergic skin reaction.
Suspect of damaging fertility or the unborn child.
May cause damage to organs.
May cause damage to organs through prolonged or repeated exposure.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Obtain special instructions before use.

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Avoid breathing dust, fumes, gas, mist, vapors and spray.

In case of inadequate ventilation wear respiratory protection.

Use only outdoors or in a well-ventilated area

Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

Wear protective gloves, protective clothing, eye protection, face protection.

If exposed or concerned; get medical attention or advice.

IF SWALLOWED: Call a poison center or physician if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: call a poison center or physician.

Collect spillage.

Store locked up.

Dispose of contents and container in accordance to local, state and federal regulations.

Section 3: COMPOSITION / INFORMATION on INGREDIENTS

Component	CAS Number	% Content
Nickel Chloride Hexahydrate	7791-20-0	53 - 56
Water	7732-18-5	44 - 47

Section 4: FIRST AID MEASURES**Eye**

Eye irritation. Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing.

Skin

Wash affected area with soap and water for at least 15 minutes, especially under fingernails and around cuticles.

Remove clothing and shoes that came in contact with the product. Wash contaminated clothing before reuse.

Thoroughly clean shoes before reuse.

Inhalation

If affected, remove individual to fresh air. If breathing is difficult, administer oxygen. Avoid mouth-to-mouth resuscitation.

Ingestion

Do not induce vomiting unless directed by medical personnel. Get medical attention.

In all cases be prepared to treat for shock.

Section 5: FIREFIGHTING MEASURES**Suitable Extinguishing Media**

In all cases this material does not support combustion. Water, water fog, and/or carbon dioxide (CO₂) may be used to cool fire-exposed storage containers, structures and to protect personnel.

Firefighting Procedures

Do not flush down sewers or other drainage systems. Material is harmful to aquatic life.

Unusual Fire and Explosion Hazards

None. Material is denser than water and will mix completely into excess water when allowed to do so.

Combustion Products

Extremely high temperatures may remove water by evaporation and lead to thermal decomposition releasing nickel oxide and chlorine.

Section 6: ACCIDENTAL RELEASE MEASURES

Keep unnecessary and/or untrained people away. Isolate spill area and avoid tracking through liquid. Dike and prevent runoff to drains or sewers. For small spills, cover with lime and then scoop into polyethylene drums for later disposal. Large spill may be pumped directly into a storage container for later disposal. Do not wash residue to drain or sewer. Refer to Section 15 for spill/release reporting information.

Section 7: HANDLING and STORAGE**Handling**

Do not get in eyes, on skin, or on clothing. Do not breathe mists. Keep containers closed when not in use. Use only with adequate ventilation. Use good personal hygiene practices. After handling wash hands before eating, drinking, or smoking. Remove contaminated clothing and protective equipment before entering eating areas. Remove contaminated clothing and clean before reuse.

Storage

Store in tightly closed containers in a well-ventilated area. Protect from physical damage. Empty containers may contain hazardous residue.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Limits****Component**

Nickel Chloride	Inhalation as soluble Nickel
	OSHA ¹ PEL: 1.0 mg/m ³
	ACGIH ² TLV: 0.1 mg/m ³ ACGIH 2003

Engineering Controls

Local exhaust ventilation may be necessary to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source. Provide mechanical ventilation for confined spaces.

Personal Protective Equipment (PPE)**Eye Protection**

Wear chemical safety goggles or face shield. Have eye-wash stations available where eye contact can occur.

Skin Protection

Avoid skin contact. Wear rubber or neoprene gloves that are impervious to conditions of use.

Respiratory Protection

Under mist free conditions no respiratory protection should be worn. Should TWA limits be exceeded a NIOSH approved respirator for mist is generally acceptable for concentrations up to 100 times the PEL. Respiratory protection must be provided in accordance with OSHA 29 CFR 1910.134.

Section 9: PHYSICAL and CHEMICAL PROPERTIES

Room Temperature Appearance	Green liquid
Odor	None
Odor Threshold	No data available
pH	2.01 - 5
Flashpoint	Not applicable

Autoignition Temperature	Not applicable
Upper/Lower Flammability Limits	Not applicable
Flammability	Not applicable
Danger of Explosion	None
Boiling Point	105 – 110°C
Melting Point/Freezing Point	Crystallizes at -3°C (27°F)
Vapor Pressure	As water
Evaporation Rate	As water
Vapor Density	As water
Solubility	Soluble in all proportions in water
Partition Coefficient N-Octanol/Water	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Specific Gravity	1.338 – 1.340
Molecular Formula	NiCl ₂ • 6H ₂ O
Molecular Weight	237.69

Section 10: STABILITY and REACTIVITY

Stability/Incompatibility

Under typical storage conditions this material is stable indefinitely. When heated and open to the air this material will lose solution water, become concentrated, and begin to crystallize. If the Nickel Chloride solution is allowed to evaporate to dryness and the solid heated above 75°C the residue will lose some waters of hydration. If heated sufficiently high it will become anhydrous nickel chloride.

Hazardous Reactions/Decomposition Products

Heating anhydrous nickel chloride to high temperatures may generate nickel oxide and chlorine.

Section 11: TOXICOLOGICAL INFORMATION

TEST	RESULTS	BASIS
Oral Toxicity (Rat)	Category 4 LD50 = 550 mg/kg	Product testing
Dermal Toxicity	Not classified	No data available
Inhalation Toxicity (Rat)	Category 4 Mixture LC50 = 4.43 mg/L	Database review ⁴ Bridging – Similar substance LC50 = 2.48 mg/L
Aspiration Hazard	Not classified	No data available
Skin Corrosion/Irritation	Not classified	Bridging – Similar substance
Eye Corrosion/Irritation	Not classified	Bridging – Similar substance
Sensitization – Skin	Category 1	Literature documentation – nickel sensitization
Sensitization – Respiration	Category 1	Literature documentation – nickel sensitization
Germ Cell Mutagenicity	Not classified	No data available
Carcinogenicity	Category 1A	IARC Group 1
Reproductive Toxicity	Category 2	Database review ⁴
Specific Target Organ Toxicity – Single Dose	Category 2	Existing GHS Classification review
Specific Target Organ Toxicity – Repeated Dose	Category 2	Existing GHS Classification review

Signs and Symptoms of Overexposure

Eye and nasal irritation, dermatitis with itching

Acute Effects

Eye Contact

Cause irritation

Skin Contact

Not absorbed through skin. May cause dermatitis or allergic skin reactions.

Inhalation

Inhalation of mist can cause upper respiratory tract irritation.

Ingestion

Can cause gastrointestinal disorders.

Carcinogenicity

Nickel compounds are listed by IARC^a as Group 1: carcinogenic to humans.

Nickel compounds are listed by NTP^b as known human carcinogens.

Section 12: ECOLOGICAL INFORMATION

Test	Results	Basis
Aquatic Toxicity-Pseudokirchneriella subcapitata (green algae)	Category 1: EC50 = 0.006 - 0.012 mg/l - 96 h	Literature review

When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. This material does not bioaccumulate.

Section 13: DISPOSAL CONSIDERATIONS

In case of a spill the nickel can be made insoluble by covering with lime or soda ash (sodium carbonate). The resulting solid material can be stored for recovery in a polyethylene drum. Do not wash residue to a drain or sewer.

Empty storage containers may be rinsed clean of product residues with clean water and the solution then treated with lime or soda ash for recovery of solid nickel carbonate/hydroxide residue. Store residue in a polyethylene drum.

After treatment with lime or soda ash, the residue is to be labeled as EPA Hazardous Waste Number F006.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Nickel Chloride), 9, PGIII, Marine Pollutant, RQ
Hazard Class 9
UN/NA Number UN3082
Packing Group III
RQ = 100 pounds

International Maritime Organization (IMDG)

Proper Shipping Name RQ, UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Nickel Chloride), 9, PGIII, Marine Pollutant
Hazard Class 9
UN/NA Number UN3082
Packing Group: III

Section 15: REGULATORY INFORMATION

U.S. Federal Regulations

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA)

100 lb. final RQ; 45.4 kg final RQ

Toxic Substances Control Act (TSCA)

Listed

Clean Water Act (CWA)

This material (Nickel Compounds) is listed under the CWA with a reportable quantity (RQ) of 100 pounds, 45.4 kg.

Clean Air Act (CAA)

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 or Class 2 Ozone Depletors.

Superfund Amendments and Reauthorization Act (SARA) Title III Information

This material is listed only under Section 313 for Nickel Compounds.

State Regulations**California:**

Nickel compounds, in general, are listed under Proposition 65 as cancer causing materials.

International Regulations**Canadian Environmental Protection Act:**

CAS# 7791-20-0 is grouped into the category "Nickel, water-soluble inorganic compounds, N.O.S." at a concentration of greater than 1% wt/wt.

Canadian Workplace Hazardous Materials Information System (WHMIS)

Anhydrous Nickel Chloride (CAS #7718-54-9) is listed. Classification D1B, D2A.

European Inventory of Existing Chemicals (EINECS)

Anhydrous Nickel Chloride is included in the ECICS as EC # 231-743-0.

Section 16: OTHER INFORMATION**National Fire Protection Association (NFPA) Ratings³**

This information is intended solely for the use of individuals trained in the NFPA system.

Health:	2
Flammability:	0
Reactivity:	0

¹ OSHA 29 CFR 1910.1000, Table Z-1

² ACGIH [2003] Nickel Threshold limit values for chemical substances and physical agents and biological exposure indices. Cincinnati, OH: American Conference of Governmental Industrial Hygienists.

³ Fire Protection Guide to Hazardous Materials, NFPA, 13th Edition, p 704-16

⁴ PCTEC database 3E Company

Key/Legend

TSCA =	Toxic Substance Control Act;
ACGIH =	American Conference of Governmental Industrial Hygienists;
IARC =	International Agency for Research on Cancer;
NIOSH =	National Institute for Occupational Safety and Health;
NTP =	National Toxicology Program;
OSHA =	Occupational Safety and Health Administration
FDRL =	Food and Drug Research Laboratories
NFPA =	National Fire Protection Association

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