



MARTRON INC.
SAFETY DATA SHEET
MARTRON NICKEL SULFAMATE 24

Section 1: IDENTIFICATION

Product Name	MARTRON NICKEL SULFAMATE 24
Product Number	MFC-002013
Other Names	Nickel Aminosulfonate, Nickel Sulphamate
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.com
Emergency Number	CHEMTREC 1-800-424-9300

Section 2: HAZARD IDENTIFICATION

GHS Classifications	
Acute Toxicity (Inhaled)	Category 4
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 1A

Supplemental	
Acute Aquatic Toxicity	Category 1

Hazards Not Otherwise Classified (HNOC)
Not classified

Labeling/Pictograms



Signal Word
Danger

Hazard Statements
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
Very toxic to aquatic life.

Precautionary Statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust, fumes, gas, mist, vapors and spray.
Use outdoors or in a well-ventilated area
Contaminated work clothing should not be allowed out of the workplace.
Wash contaminated clothing before reuse.
Wear protective gloves, protective clothing, eye protection, face protection.

In case of inadequate ventilation wear respiratory protection.

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention If exposed or concerned: Get medical advice/attention.

Store locked up.

Avoid release to the environment.

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

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	% Content
13770-89-3	44 – 51 7732-18-5	49 – 56

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. 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

Induce vomiting only if direction to do so 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 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, then dehydration, and lead to thermal decomposition releasing nickel oxide, sulfur dioxide (SO₂), and ammonia (NH₃).

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 being used. 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 Sulfamate –	Inhalation as soluble Nickel
	OSHA ^a PEL: 1.0 mg/m ³
	ACGIH ^b TLV: 0.1 mg/m ³

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	Clear green liquid
Odor	None
Odor Threshold	No data available
pH	4.0 – 4.7
Flashpoint	Not Applicable
Auto-Ignition Temperature	Not Applicable
Upper/Lower Flammability Limits	Not Applicable
Flammability	Not Applicable
Danger of Explosion	None
Boiling Point	As water
Melting Point/Freezing Point	Crystallizes at 34°F (1°C)
Vapor Pressure	As water
Evaporation Rate	As water
Vapor Density	As water
Solubility	All proportions
Specific Gravity	1.4 – 1.6
Partition Coefficient: n-octanol/water	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Molecular Formula	Ni(SO ₃ NH ₂) ₂ • 4H ₂ O

Molecular Weight

322.94

Section 10: STABILITY and REACTIVITY

Stability/Incompatibility

Strong acids will decompose sulfamate into ammonium sulfate.

Hazardous Reactions/Decomposition Products

Extremely high temperatures may lead to thermal decomposition releasing nickel oxide, sulfur dioxide (SO₂), and ammonia (NH₃). High temperatures will produce nickel ammonium sulfate.

Section 11: TOXICOLOGICAL INFORMATION

Test	Results	Basis
Oral Toxicity (Rat)	Not classified Mixture LD50 – 2153 mg/kg	Literature documentation Nickel sulfamate tetrahydrate LD50 = 1098 mg/kg ^e
Dermal Toxicity	Not classified	No data available
Inhalation Toxicity (Rat)	Category 4 Mixture LC50 – 4.86 mg/kg	Bridging – Similar substance LC50 – 2.48 mg/L (Dust) ^f
Aspiration Hazard	Not classified	No data available
Skin Corrosion/Irritation	Not classified	Bridging – Similar substance ^f
Eye Corrosion/Irritation	Not classified	Bridging – Similar substance ^f
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	Not classified	No data available
Specific Target Organ Toxicity – Single Dose	Not classified	No data available
Specific Target Organ Toxicity – Repeated Dose	Not classified	No data available

Signs and Symptoms of Overexposure

Eye and nasal irritation, dermatitis with itching

Acute Effects

Eye Contact

Causes 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

According to OSHA CFR 1910-1200 (Hazard Communication) Nickel and certain Nickel compounds are deemed to be possible cancer hazards. This is based on assessment by the U.S. NTP^c (National Toxicology Program) that they may reasonably be anticipated to be carcinogens and an assessment of IARC (International Agency of Research on Cancer) which concluded that there was limited evidence of carcinogenicity to humans. There has been no evidence that workers exposed to soluble Nickel Salts in their use have demonstrated any increased risk of respiratory cancer.

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

Section 12: ECOLOGICAL INFORMATION

Test	Results	Basis	
Aquatic Toxicity- Acute	Category 1	Bridging – similar substance Pimephales promelas	LC50 = 0.4 mg/L ^f

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 significantly bioaccumulate. No information available is specific for nickel sulfamate.

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 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 Sulfamate), 9, PGIII, Marine Pollutant
Hazard Class	9
UN/NA Number	UN3082
Packing Group	III

International Maritime Organization (IMDG)

Proper Shipping Name	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Nickel Sulfamate), 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)

No RQ is assigned to this compound.

Toxic Substances Control Act (TSCA)

Under normal operation conditions involving an aqueous solution or as the hexahydrate, Nickel Sulfamate is not listed on the TSCA Inventory List. Anhydrous Nickel Sulfamate (CAS # 13770-89-3) is listed on the TSCA Inventory List.

Clean Water Act (CWA)

No RQ is assigned to this compound.

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 in Section 313 under the category of 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 # 13770-89-3 and 124594-15-6 are 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)

Not listed

European Inventory of Existing Chemicals (EINECS)

Anhydrous Nickel Sulfamate is included in the ECICS as EC # 237-396-1. same number is being used for hydrated forms of Nickel Sulfamate.

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

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

Health: 2
Flammability: 0
Reactivity: 0

^aOSHA 29 CFR 1910.1000, Table Z-1

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

^cNTP. 2002. Report on carcinogens. Bethesda, MD: U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program. <http://ehp.niehs.nih.gov/roc/toc10/html>. June 06, 2003.

^dIARC. 1990. IARC monographs on the evaluation of carcinogenic risks to humans. Volume 49: Chromium, nickel and welding. Lyon, France: International Agency for Research on Cancer, World Health Organization, 257-445.

^eHenderson, Rayetta G., Durando, Jennifer, Oller, Adriana R., Merkel, Daniel J., Marone, Palma Ann, Hudson, K. Bates. Acute oral toxicity of nickel compounds. Regulatory Toxicology and Pharmacology 62. 2012 425-432.

^fPCTEC 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

Version Date February 12, 2018

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall **Martron Inc.** be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if **Martron Inc.** has been advised of the possibility of such damages.