

# SAFETY DATA SHEET

Version 8.20  
Revision Date 11/20/2024  
Print Date 11/21/2024

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name	: Nickel standard solution traceable to SRM from NIST Ni(NO <sub>3</sub> ) <sub>2</sub> in HNO <sub>3</sub> 0.5 mol/l 1000 mg/l Ni Certipur®
Product Number	: 1.19792
Catalogue No.	: 119792
Brand	: Millipore

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

Identified uses	: Reagent for analysis
Uses advised against	: The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company	: Sigma-Aldrich Inc. 3050 SPRUCE ST ST. LOUIS MO 63103 UNITED STATES
Telephone	: +1 314 771-5765
Fax	: +1 800 325-5052

### 1.4 Emergency telephone

Emergency Phone #	: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
-------------------	--------------------------------------------------------------------------------------------------

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to Metals (Category 1), H290

Millipore - 1.19792

Page 1 of 15

The life science business of Merck KGaA, Darmstadt, Germany  
operates as MilliporeSigma in the US and Canada

**Millipore**  
**Sigma**

Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Respiratory sensitization (Category 1), H334  
Skin sensitization (Category 1), H317  
Carcinogenicity (Category 1A), H350  
Reproductive toxicity (Category 1B), H360  
Specific target organ toxicity - repeated exposure (Category 2), H373  
Short-term (acute) aquatic hazard (Category 3), H402  
Long-term (chronic) aquatic hazard (Category 3), H412

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 Statements

H290	May be corrosive to metals.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P234	Keep only in original container.
P260	Do not breathe mist or vapors.
P264	Wash skin thoroughly after handling.
P272	Contaminated work clothing must 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.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P341	IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.

P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362	Take off contaminated clothing and wash before reuse.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of contents/ container to an approved waste disposal plant.

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

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Component	Classification	Concentration
<b>nitric acid</b>		
CAS-No.	7697-37-2	Ox. Liq. 3; Met. Corr. 1;
EC-No.	231-714-2	Acute Tox. 3; Skin Corr.
Index-No.	007-030-00-3	1A; Eye Dam. 1; H272,
Registration number	01-2119487297-23-XXXX	H290, H331, H314, H318 Concentration limits: >= 1 %: Met. Corr. 1, H290; >= 65 %: Ox. Liq. 3, H272; >= 20 %: Skin Corr. 1A, H314; 5 - < 20 %: Skin Corr. 1B, H314; >= 3 %: Eye Dam. 1, H318; 1 - < 3 %: Eye Irrit. 2, H319; 1 - < 5 %: Skin Irrit. 2, H315;
<b>nickel(II) nitrate</b>		
CAS-No.	13138-45-9	Ox. Sol. 2; Acute Tox. 4;
EC-No.	236-068-5	Skin Irrit. 2; Eye Dam. 1;
Index-No.	028-012-00-1	Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1A; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H302, H332, H315, H318, H334, H317, H341, H350i, H360, H372, H400, H410 Concentration limits: >= 1 %: STOT RE 1, H372; 0.1 - < 1 %: STOT RE 2, H373; >= 20 %: Skin Irrit. 2, H315; >= 0.01 %: Skin Sens. 1, H317;

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

---

## **SECTION 4: First aid measures**

### **4.1 Description of first-aid measures**

#### **General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air. Call in physician.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). 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

---

## **SECTION 5: Firefighting measures**

### **5.1 Extinguishing media**

#### **Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### **Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

### **5.2 Special hazards arising from the substance or mixture**

Nitrogen oxides (NOx)

Not combustible.

Ambient fire may liberate hazardous vapours.

### **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

---

## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

#### **Storage conditions**

No metal or light-weight-metal containers. No metal containers.

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature see product label.

#### **Storage class**

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### **7.3 Specific end use(s)**

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

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis	
nitric acid	7697-37-2	TWA	2 ppm	USA. ACGIH Threshold Limit Values (TLV)	
		STEL	4 ppm	USA. ACGIH Threshold Limit Values (TLV)	
		ST	4 ppm 10 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits	
		TWA	2 ppm 5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits	
		TWA	2 ppm 5 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		PEL	2 ppm 5 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
		STEL	4 ppm 10 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
nickel(II) nitrate	13138-45-9	TWA	1 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		TWA	0.1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)	
	Remarks	Not classifiable as a human carcinogen			
		TWA	0.015 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits	
		Potential Occupational Carcinogen			
		PEL	0.05 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)	

#### Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis	
nickel(II) nitrate	13138-45-9	Nickel	5 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)	
	Remarks	End of shift at end of workweek				

	Nickel	30 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	End of shift at end of workweek			

## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face protection

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

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

#### Body Protection

protective clothing

#### Respiratory protection

Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

required when vapours/aerosols are generated.

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### **Control of environmental exposure**

Do not let product enter drains.

---

## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

a) Appearance	Form: liquid Color: green
b) Odor	odorless
c) Odor Threshold	No data available
d) pH	ca.0.5 at 20 °C (68 °F)
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)	The product is not flammable.
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Density	ca.1.014 g/cm3 at 20 °C (68 °F)
Relative density	No data available
n) Water solubility	soluble
o) Partition coefficient: n-octanol/water	Not applicable
p) Autoignition temperature	Not applicable
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	Not classified as explosive.
t) Oxidizing properties	none

## 9.2 Other safety information

No data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with:

Metals

metal alloys

Release of:

nitrous gases

Hydrogen

Violent reactions possible with:

The generally known reaction partners of water.

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Metals, metal alloysMetals

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

#### Acute toxicity

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute toxicity estimate Inhalation - 4 h - 109.14 mg/l - vapor(Calculation method)

Symptoms: Possible symptoms:, mucosal irritations

Dermal: No data available

#### Skin corrosion/irritation

Remarks: Mixture causes skin irritation.

#### Serious eye damage/eye irritation

Remarks: Mixture causes serious eye irritation.

### **Respiratory or skin sensitization**

Mixture may cause allergy or asthma symptoms or breathing difficulties if inhaled. Mixture may cause an allergic skin reaction.

### **Germ cell mutagenicity**

No data available

### **Carcinogenicity**

Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (nickel(II) nitrate)

NTP: Known - Known to be human carcinogen (nickel(II) nitrate)

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

### **Reproductive toxicity**

May harm the unborn child.

May impair fertility.

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

Mixture may cause damage to organs through prolonged or repeated exposure.

### **Aspiration hazard**

No data available

## **11.2 Additional Information**

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

### **Components**

#### **nitric acid**

##### **Acute toxicity**

Oral: No data available

Acute toxicity estimate Inhalation - 4 h - 2.65 mg/l - vapor  
(Expert judgment)

Dermal: No data available

##### **Skin corrosion/irritation**

Skin - Rabbit

Result: Causes severe burns.

Remarks: (IUCLID)

Remarks: Causes poorly healing wounds.

##### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes burns.

Remarks: (IUCLID)

Remarks: Causes serious eye damage.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**nickel(II) nitrate**

**Acute toxicity**

LD50 Oral - Rat - male - 325 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 1.3 - 4.5 mg/l - dust/mist

(OECD Test Guideline 403)

Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: Irritating to skin. - 4 h

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: positive

May cause an allergic skin reaction.

(Maximization Test)

**Germ cell mutagenicity**

Suspected of causing genetic defects.

**Carcinogenicity**

May cause cancer by inhalation.

**Reproductive toxicity**

May damage the unborn child.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

No data available

---

**SECTION 12: Ecological information****12.1 Toxicity****Mixture**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

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

**12.6 Endocrine disrupting properties**

No data available

**12.7 Other adverse effects**

Discharge into the environment must be avoided.

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of drinking- water supplies.

Discharge into the environment must be avoided.

**Components****nitric acid**

No data available

**nickel(II) nitrate**

Toxicity to bacteria

Toxicity to fish(Chronic toxicity) flow-through test NOEC - Pimephales promelas (fathead minnow) - 0.057 mg/l - 32 d  
Remarks: (ECHA)

## **SECTION 13: Disposal considerations**

### 13.1 Waste treatment methods

## Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

## **SECTION 14: Transport information**

**DOT (US)**

UN number: 3264 Class: 8 Packing group: III  
Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid)

## Reportable Quantity (RQ):

EMR 8

**IMDG** UN number: 3264 Class: 8 Packing group: III EMS-No: F-A, S-B  
Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)

TATA

**IATA**  
UN number: 3264 Class: 8 Packing group: III  
Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid)

---

## SECTION 15: Regulatory information

## CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RO

## SARA 304 Extremely Hazardous Substances Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RO

## **SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

Components	CAS-No.	Component TPQ (lbs)
nitric acid	7697-37-2	1000

SARA 313

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

nitric acid 7697-37-2  $\geq 1\% < 5\%$

Millipore - 1.19792

Page 13 of 15

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

**MILLIPORE**  
**SIGMA**

nickel(II) nitrate	13138-45-9	>= 0.1 - < 1 %
--------------------	------------	----------------

### **Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

### **Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

nitric acid	7697-37-2	>= 1 - < 5 %
-------------	-----------	--------------

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

nitric acid	7697-37-2	>= 1 - < 5 %
nickel(II) nitrate	13138-45-9	>= 0.1 - < 1 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### **US State Regulations**

#### **Massachusetts Right To Know**

water	7732-18-5
nitric acid	7697-37-2

#### **Pennsylvania Right To Know**

nitric acid	7697-37-2
nickel(II) nitrate	13138-45-9

#### **Maine Chemicals of High Concern**

water	7732-18-5
nickel(II) nitrate	13138-45-9

#### **Vermont Chemicals of High Concern**

water	7732-18-5
-------	-----------

#### **Washington Chemicals of High Concern**

water	7732-18-5
-------	-----------

#### **California Prop. 65**

WARNING: This product can expose you to chemicals including nickel(II) nitrate, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### **The ingredients of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

---

**SECTION 16: Other information****Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).

Version: 8.20

Revision Date: 11/20/2024

Print Date: 11/21/2024