

## SAFETY DATA SHEET

According to JIS Z 7253:2019  
Revision date 25-Mar-2024  
Revision Number 3.04

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Nickel Standard Solution (Ni 1000)
Product Code	147-06461

**Supplier** FUJIFILM Wako Pure Chemical Corporation  
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan  
Phone: +81-6-6203-3741  
Fax: +81-6-6203-2029

**Emergency telephone number** +81-6-6203-3741 / +81-3-3270-8571

**Recommended uses** For research use only

**Restrictions on use** Seek expert judgment when using for purposes other than those recommended.

## Section 2: HAZARDS IDENTIFICATION

## GHS classification

## Classification of the substance or mixture

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory sensitization

Skin sensitization

Carcinogenicity

Reproductive Toxicity

Category 2

Category 2A

Category 1

Category 1

Category 1A

Category 2

## Pictograms



Signal word

Danger

## Hazard statements

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H350 - May cause cancer

H361 - Suspected of damaging fertility or the unborn child

H317 - May cause an allergic skin reaction

## 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
- Avoid breathing dust/fume/gas/mist/vapors/spray
- In case of inadequate ventilation wear respiratory protection
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves

## Precautionary statements-(Response)

- IF exposed or concerned: Get medical advice/attention
- 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
- 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
- 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

**Precautionary statements-(Storage)**

- Store locked up

**Precautionary statements-(Disposal)**

- Dispose of contents/container to an approved waste disposal plant

**Others**

**Other hazards** Not available

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Single Substance or Mixture** Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Water	<100	18.02	-	-	7732-18-5
Nitric Acid	0.6	63.01	(1)-394	*	7697-37-2
Nickel(II) nitrate hexahydrate	0.1(as Ni)	290.79	(1)-485	*	13478-00-7

**Note on ISHL No.:** \* in the table means announced chemical substances.

### Section 4: FIRST AID MEASURES

**Inhalation**

Remove to fresh air. If symptoms persist, call a physician.

**Skin contact**

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

**Eye contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

**Ingestion**

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

**Protection of first-aiders**

Use personal protective equipment as required.

### Section 5: FIRE FIGHTING MEASURES

**Suitable extinguishing media**

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

**Unsuitable extinguishing media**

No information available

**Specific hazards arising from the chemical product**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Special extinguishing method**

No information available

**Special protective actions for fire-fighters**

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full

firefighting turnout gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

### Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

### Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

### Recovery, neutralization

No information available

### Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

## Section 7: HANDLING AND STORAGE

### Handling

#### Technical measures

Avoid contact with alkaline substances. Avoid contact with eyes and skin Open after shaking containers well. Use with local exhaust ventilation.

#### Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

#### Safety handling precautions

Avoid contact with skin and eyes Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray

### Storage

#### Safe storage conditions

##### Storage conditions

Store away from sunlight in well-ventilated place at room temperature (under 25 °C).  
Keep container tightly closed.

##### Safe packaging material

Polyethylene

#### Incompatible substances

Metals, alkaline substances

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

### Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Nitric Acid 7697-37-2	TWA: 2 ppm OEL TWA: 5.2 mg/m <sup>3</sup> OEL	N/A	STEL: 4 ppm TWA: 2 ppm
Nickel(II) nitrate hexahydrate 13478-00-7	TWA: 0.01 mg/m <sup>3</sup> OEL ISHL/ACL: 0.1 mg/m <sup>3</sup>	ISHL/ACL: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> Ni inhalable particulate matter

### Personal protective equipment

#### Respiratory protection

Gas mask for acidic gas ( JIS T 8152 )

#### Hand protection

chemical protective gloves ( JIS T 8116 )

**Eye protection** protective eyeglasses or chemical safety goggles (JIS T 8147)

**Skin and body protection** Long-sleeved work clothes, protective boots

#### General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as "Chemical Substances Hazardous to Skin, etc.", use appropriate protective equipment to them.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

#### Form

**Color** pale green

**Turbidity** clear

**Appearance** liquid

#### Odor

no data available

#### Melting point/freezing point

no data available

#### Boiling point, initial boiling point and boiling range

no data available

#### Flammability

no data available

#### Evaporation rate:

no data available

#### Flammability (solid, gas):

no data available

#### Upper/lower flammability or explosive limits

##### Upper:

no data available

##### Lower:

no data available

#### Flash point

no data available

#### Auto-ignition temperature:

no data available

#### Decomposition temperature:

no data available

#### pH

Strongly acidic, pH = 1

#### Viscosity (coefficient of viscosity)

no data available

#### Dynamic viscosity

no data available

#### Solubilities

water and Ethanol Miscible at any arbitrary ratio .

#### n-Octanol/water partition coefficient:(log Pow)

no data available

#### Vapour pressure

no data available

#### Specific Gravity / Relative density

no data available

#### Vapour density

no data available

#### Particle characteristics

no data available

## Section 10: STABILITY AND REACTIVITY

#### Stability

**Reactivity** no data available

**Chemical stability** Stable under recommended storage conditions.

#### Hazardous reactions

Corrodes metals to generate hydrogen gas.

#### Conditions to avoid

Extremes of temperature and direct sunlight

#### Incompatible materials

Metals, alkaline substances

#### Hazardous decomposition products

Nitrogen oxides (NOx), Metal oxides

## Section 11: TOXICOLOGICAL INFORMATION

#### Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric Acid	N/A	N/A	334 ppm ( Rat ) 0.5 h
Nickel(II) nitrate hexahydrate	1620 mg/kg ( Rat )	N/A	N/A

Chemical Name	Acute toxicity -oral- source	Acute toxicity -dermal- source	Acute toxicity -inhalation gas-
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	information	information	source information
Nitric Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Nitric Acid	Based on the NITE GHS Classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS Classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

**Skin irritation/corrosion**

Chemical Name	Skin corrosion/irritation source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

**Serious eye damage/ irritation**

Chemical Name	Serious eye damage/irritation source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

**Respiratory or skin sensitization**

Chemical Name	Respiratory or Skin sensitization source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

Chemical Name	germ cell mutagenicity source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

**Carcinogenicity**

Chemical Name	Carcinogenicity source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Nickel(II) nitrate hexahydrate 13478-00-7	Known	Group 1	N/A	Group 1

**Reproductive toxicity**

Chemical Name	Reproductive toxicity source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

**STOT-single exposure**

Chemical Name	STOT -single exposure- source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

**STOT-repeated exposure**

Chemical Name	STOT -repeated exposure- source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

**Aspiration hazard**

Chemical Name	Aspiration Hazard source information
Nitric Acid	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.

## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
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Nitric Acid	N/A	LC50 : <i>Gambusia affinis</i> 72 mg/L 96 h	N/A
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**Other data**

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Nitric Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Nickel(II) nitrate hexahydrate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Mobility in soil</b>	No information available
<b>Hazard to the ozone layer</b>	No information available

**Section 13: DISPOSAL CONSIDERATIONS****Waste from residues**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated container and contaminated packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Section 14: TRANSPORT INFORMATION****ADR/RID**

UN number	UN2031
Proper shipping name:	Nitric acid
UN classification	8
Subsidiary hazard class	
Packing group	II
Marine pollutant	Not applicable

**IMDG**

UN number	UN2031
Proper shipping name:	Nitric acid
UN classification	8
Subsidiary hazard class	
Packing group	II
Marine pollutant (Sea)	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

**IATA**

UN number	UN2031
Proper shipping name:	Nitric acid
UN classification	8
Subsidiary hazard class	
Packing group	II
Environmentally Hazardous Substance	Not applicable

**Section 15: REGULATORY INFORMATION****Japanese regulations**

Fire Service Act	Not applicable
Poisonous and Deleterious Substances Control Law	Not applicable

<b>Industrial Safety and Health Act</b>	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)
<b>Industrial Safety and Health Act (2024-)</b>	Notifiable Substances (Law Art.57-2)
<b>Regulations for the carriage and storage of dangerous goods in ship</b>	【2024.4.1~】Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
<b>Civil Aeronautics Law</b>	Corrosive Substances (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
<b>Marine Pollution Prevention Law</b>	Corrosive Substances (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
<b>Pollutant Release and Transfer Register Law (2023.4.1-)</b>	Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y
<b>Specified Class 1-No.</b>	Specified Class 1 No.
<b>Water Pollution Control Act</b>	309
<b>Export Trade Control Order</b>	Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)
<b>Air Pollution Control Law</b>	Not applicable
	Priority Chemical Substances

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2)	Pollutant Release and Transfer Register Law (2023.4.1-)
Nickel(II) nitrate hexahydrate 13478-00-7 ( 0.1(as Ni) )	-	Applicable	Applicable

## Section 16: OTHER INFORMATION

### Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)  
<http://www.safe.nite.go.jp/japan/db.html>  
 IATA dangerous Goods Regulations  
 RTECS:Registry of Toxic Effects of Chemical Substances  
 Japan Industrial Safety and Health Association GHS Model SDS  
 Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.  
 Chemical Dictionary, Kyouritsu Publishing Co., Ltd.  
 etc

### Record of SDS revisions Disclaimer

The following contents were revised. Regulatory information.

This SDS is according to JIS Z 7253: 2019. 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, 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.

GHS Classification is according to JIS Z 7252:2019. \*JIS: Japanese Industrial Standards

**End of Safety Data Sheet**