Zinc, standard solution 1000mg/L,
JUNSEI CHEMICAL CO., LTD.,10045jis_J_E1-3,09/Nov/2026

Date of issue for the 1st edition : 15/Oct/2015
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Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Zinc, standard solution 1000mg/L

Reference number(SDS):10045jis_J_E1-3

Product type:

Reagent

Recommended use of the chemical and restrictions on use

Recommended uses: Research and Development (Atomic Absorption Spectroscopy)

Restrictions on uses: Do not use for other purposes.

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.
Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan
Division: Quality Assurance Department
Telephone number: +81-48-986-6161
FAX: +81-48-989-2787
e-mail address: shiyaku-t@junsei.co.jp

Section 2. Hazards identification

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity - single exposure: Category 2 (respiratory organs)

Specific target organ toxicity - repeated exposure: Category 2 (respiratory organs, teeth)

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Hazard pictograms:

Signal word: Danger

Hazard statements

H330-Fatal if inhaled

H314-Causes severe skin burns and eye damage

H318-Causes serious eye damage

H371-May cause damage to organs

H373-May cause damage to organs through prolonged or repeated exposure

Precautionary statements

Prevention

Do not breathe vapor.

In case of inadequate ventilation wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Wash hands thoroughly after handling.

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

Wash hands thoroughly after handling. Do not touch eyes.

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

Response

IF exposed or concerned: Get emergency medical help immediately.
Get emergency medical help immediately.
Get medical help if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
Wash contaminated clothing before reuse.
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

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

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3. Composition/information on ingredients

Substance/mixture:

Mixture

Ingredient name:Zinc
Content (%):0.1
Chemical formula:Zn
CAS RN®:7440-66-6
AW:65.39
EC No.:231-175-3

Ingredient name:Nitric acid
Content (%):5.8
Chemical formula:HNO3
ENCS:1-394
CAS RN®:7697-37-2
MW:63.01
EC No.:231-714-2

Ingredient name:Water
Content (%):Residual quantity of the ingredient mentioned above
Chemical formula:H2O
ENCS:Existing Chemical Substances under CSCL
CAS RN®:7732-18-5
MW:18.02
EC No.:231-791-2

Note : The figures shown above are not the specifications of the product.

Section 4. First aid measures

Descriptions of first aid measures

General measures

IF exposed or concerned: Get emergency medical help immediately.
Keep victim warm and quiet.
Call emergency medical service.
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.
Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

IF INHALED

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Give artificial respiration if victim is not breathing.
Administer oxygen if breathing is difficult.
Get emergency medical help immediately.

IF ON SKIN

IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
Get emergency medical help immediately.
Remove and isolate contaminated clothing and shoes.
For minor skin contact, avoid spreading material on unaffected skin.

IF IN EYES

IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical help.

IF SWALLOWED

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF SWALLOWED: Get medical help.

Most important symptoms and effects, both acute and delayed

Specific information on symptom and effect are unknown.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Specific treatment is urgent.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.
The product is non-flammable.

Unsuitable extinguishing media

Do not use direct water jet.

Specific hazards arising from the substance or mixture

Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Special extinguishing method

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.
Wear proper protective equipment.
PUBLIC SAFETY: Ventilate closed spaces before entering.
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
EVACUATION : Spill: See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Cover with DRY earth, DRY sand, or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
All equipment used when handling the product must be grounded.
Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

Preventive measures for secondary accident

Collect spillage.
Stop leak if you can do it without risk.
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
Prevent entry into waterways, sewers, basements or confined areas.
Do not get water inside containers.
Keep out of low areas.

Reference to other sections

Refer to section 8
Refer to section 13

Section 7. Handling and storage

Handling

Engineering measures

(Measures to prevent operator exposure)

Do not breathe vapor.

(Measures to prevent fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Local ventilation/general ventilation)

Exhaust/ventilator should be available.

(Precautions)

Avoid contact with skin.
Avoid contact with eyes.

Advice on safe handling

Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
Use personal protective equipment as required.
When using do not eat, drink or smoke.

Avoidance of contact

See Section 10: Stability and Reactivity.

Advice on general occupational hygiene

Do not get in eyes, on skin, or on clothing.
Wash hands thoroughly after handling. Do not touch eyes.
Do not eat, drink or smoke when using this product.
Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Keep cool.

Store in accordance with local/regional/national/international regulations.

Store locked up.

Protect from sunlight. Store in a well-ventilated place.

Incompatible substances

Refer to Section 10. Stability and reactivity.

Safe packaging material

Keep only in original packaging.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

Section 8. Exposure controls/personal protection

Permissible concentration

Control value and Concentration standard value under ISHA

Not established

Occupational exposure limit values

JSOH

(Nitric acid)

2ppm; 5.2mg/m3

ACGIH

(Nitric acid)

TWA: (2ppm); STEL: (4ppm) (URT & eye irr; dental erosion)

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Personal protective equipment

Respiratory protection

Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).

Hand protection

Wear protective gloves. Recommended material(s): neoprene, nitrile, butyl rubber, viton, PVC

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Chemical-resistant, impervious gloves complying with an approved standard (e.g. JIS T8116) should be used.

Eye/face protection

Wear chemical safety goggle.

Wear eye/face protection in accordance with approved standards (e.g. JIS T8147).

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Personal protective equipment for the body and skin should be selected based on the task being performed and the risks involved.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor data is not available.
Odor threshold data is not available.
Melting point/Freezing point data is not available.
Boiling point, initial boiling point, or boiling range data is not available.
Flammability: Non-flammable
Lower and upper explosion limit data is not available.
Flash point: Non-flammable
Auto-ignition temperature data is not available.
Decomposition temperature data is not available.
pH: <= 2 (Strong acidic)
Kinematic viscosity data is not available.
Solubility:
Solubility in water: Miscible
Solubility in solvent data is not available.
Partition coefficient n-octanol/water data is not available.
Vapor pressure data is not available.
Density and/or relative density data is not available.
Relative vapor density (Air=1) data is not available.
Particle characteristics data is not available.

Section 10. Stability and Reactivity

Reactivity
Reactivity data is not available.
Chemical stability
Stable under normal storage/handling conditions.
Possibility of hazardous reactions
Possibility of hazardous reactions data is not available.
Conditions to avoid
Avoid direct sunlight, fire, flame, high temperature.
Contact with incompatible materials.
Incompatible materials
Bases
Hazardous decomposition products
Nitrogen oxides, Zinc oxides

Section 11. Toxicological Information

The product has not been subjected to toxicological testing. Refer to the available data on the constituents.

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
[NITE-CHRIP]
(Zinc)
rat LD50: > 2000 mg/kg (source: NITE)
Acute toxicity (Dermal)
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Acute toxicity (Inhalation)
[Product]
Category 2, Fatal if inhaled
[Data for components of the product]
[NITE-CHRIP]
(Zinc)
dust/mist: rat LC50: 5410 mg/m3 (OECD TG 403) (source: NITE)
(Nitric acid)
vapor: rat LC50: 49 ppm (4-hour) (source: NITE)

Skin corrosion/irritation
[Product]
Category 1, Causes severe skin burns and eye damage
[Product data]
[GHS Cat. based on pH]
pH <= 2, accordingly Skin corrosion/irritation: Category 1
[Data for components of the product]
[NITE-CHRIP]
(Nitric acid)
Category 1 (source: NITE)

Serious eye damage/irritation
[Product]
Category 1, Causes serious eye damage
[Product data]
[GHS Cat. based on pH]
pH <= 2, accordingly Serious eye damage/eye irritation: Category 1
[Data for components of the product]
[NITE-CHRIP]
(Zinc)
Category 2B (source: NITE)
(Nitric acid)
Category 1 (source: NITE)

Respiratory or skin sensitization
Respiratory sensitization
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.
Skin sensitization
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Germ cell mutagenicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
No data available.

Carcinogenicity
[Product]
Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
[EPA]
(Zinc)
I; Data are inadequate for an assessment of human carcinogenic potential(1999)

Reproductive toxicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Specific target organ toxicity - single exposure

[Product]

Category 2, May cause damage to organs

[Data for components of the product]

[NITE-CHRIP]

(Nitric acid)

Category 1 (respiratory system) (source: NITE)

Specific target organ toxicity - repeated exposure

[Product]

Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE-CHRIP]

(Nitric acid)

Category 1 (teeth, respiratory system) (source: NITE)

Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Section 12. Ecological Information

The product has not been subjected to ecotoxicological testing. Refer to the available data on the constituents.

Ecotoxicity

Aquatic toxicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[NITE-CHRIP]

(Zinc)

Algae (Pseudokirchneriella subcapitata) 72-hour ErC50: 0.15 mg/L (source: NITE)

(Nitric acid)

Fish (Gambusia affinis) 96-hour LC50: 72 mg/L (source: NITE)

Water solubility

[Data for components of the product]

(Zinc)

reaction (source: ICSC, 2019)

(Nitric acid)

miscible (20℃) (source: ICSC, 2016)

Persistence and degradability

[Data for components of the product]

(Zinc)

Not rapidly degradable (source: NITE)

Bioaccumulative potential

[Data for components of the product]

(Nitric acid)

log Pow: -0.21 (source: ICSC, 2016)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Waste from residues

Disposal should be in accordance with local, national, and international laws and regulations.
Comply with relevant laws and regulations as well as local municipal standards.
Do not dump into sewers, on the ground or into any body of water.

Contaminated packing

Disposal should be in accordance with local, national, and international laws and regulations.
Comply with relevant laws and regulations as well as local municipal standards.
Dispose of container after using the contents completely.

Section 14. Transport Information

UNRTDG

UN Number : UN2031
UN Proper Shipping Name : NITRIC ACID, other than red fuming, with 20% or less nitric acid
Transport hazard class(es) :8
Packing group :II

IMDG Code (International Maritime Dangerous Goods Regulations)

UN number : UN2031
UN Proper Shipping Name : NITRIC ACID, other than red fuming, with 20% or less nitric acid
Transport hazard class(es) : 8
Packing group : II

IATA (Dangerous Goods Regulations)

UN number : UN2031
UN Proper Shipping Name : NITRIC ACID, other than red fuming, with 20% or less nitric acid
Transport hazard class(es) : 8
Hazard labels : Corrosive
Packing group : II

Marine pollutants (yes/no) : no

Special precautions for user

No information available.

Maritime transport in bulk according to IMO instruments

MARPOL Annex II - Noxious Liquid Substances

Noxious Liquid Substances ; Cat. Y
Nitric acid
Non Noxious Liquid Substances ; Cat. OS
Water

MARPOL Annex V - HME (Harmful to the Marine Environment)

Specific target organ toxicity - repeated exposure: cat.1
Nitric acid

ERG GUIDE No.: 157

Section 15. Regulatory Information

Applicable laws and regulations

Labor Standards Act, Japan

Chemical substances or compounds (including alloys) causing disease (item (iv)-1 of Appended Table 1-2 of Regulation)

Metal fumes such as zinc; Nitric acid

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

7440-66-6; 7697-37-2; 7732-18-5

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Nitric acid

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

Section 16. Other information

GHS classification and labelling

H330-Acute toxicity, Category 2: H330 Fatal if inhaled

H314-Skin corrosion/irritation, Category 1: H314 Causes severe skin burns and eye damage

H318-Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage

H371-Specific target organ toxicity - single exposure, Category 2: H371 May cause damage to organs

H373-Specific target organ toxicity - Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (67th Edition) 2026

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2026 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2025

JIS Z 7253 : 2025

Recommendation of occupational exposure limits (2024-2025) (JSOH)

Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.41 (https://www.asahi-ghs.com/)

European Chemicals Agency ECHA CHEM Database (https://em.echa.europa.eu/)

National Institute of Technology and Evaluation NITE-CHRIP (https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.1) (May. 2024, METI)

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists;
anh - anhydride;
ATE - Acute Toxicity Estimate;
BCF - Bioconcentration Factor;
BOD - Biochemical Oxygen Demand;
Cat. - Category;
Ceiling-C - Ceiling value;
COD - Chemical Oxygen Demand;
CSCL - Chemical Substances Control Law in Japan;
DSEN - Dermal Sensitization;
EC No. - The European Community number;
EC50 - Effective Concentration 50;
ENCS - Existing and New Chemical Substances Inventory under CSCL
EPA - US Environmental Protection Agency;
EU - European Union;
GHS - Globally Harmonized System of Classification and Labelling of Chemicals;
IARC - International Agency for Research on Cancer;
IATA - International Air Transport Association;
IBC Code - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;
IMDG Code - International Maritime Dangerous Goods Code;
ISHA - Industrial Safety and Health Act in Japan;
JSOH - Japan Society for Occupational Health;
LC50 - Lethal Concentration 50;
LD50 - Lethal Dose 50;
logPow - n-Octanol/water Partition Coefficient;
MARPOL - International Convention for the Prevention of Pollution from Ships;
METI - Ministry of Economy, Trade and Industry in Japan;
MHLW - Ministry of Health, Labour and Welfare in Japan;
MOE - Ministry of the Environment in Japan
NOEC - No Observed Effect Concentration;
NTP - US National Toxicology Program;
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No.1907/2006;
RSEN - Respiratory Sensitization;
Skin - Danger of cutaneous absorption;
STEL - Short-term Exposure Limit;
STOT - Specific target organ toxicity;
SVHC - Substance of Very High Concern under REACH;
TWA - time-weighted average;
UN - United Nations;
UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods;

General Disclaimer

The information relates to this specific material. It may not be valid for this material, if used in combination with any other materials or in any process. It is the user's responsibility to satisfy him-selves as to the suitability and completeness of this information for his own particular use.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this

Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.
The GHS classification data given here is based on current Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2025).