

Safety Data Sheet**1. Chemical product and company identification**

Product name	:	Zinc-EDTA2Na solution
SDS code	:	U5-12
Company/undertaking identification	:	HAYASHI PURE CHEMICAL IND.,LTD. Address : 3-2-12 Uchihiranomachi, Chuo-ku, Osaka, Osaka, Japan Telephone : 06-6910-7305 E-mail : shiyaku_kikaku@hpc-j.co.jp URL : https://www.hpc-j.co.jp/
Emergency number	:	06-6910-7305
Recommended use	:	For research and experimental use only.
Restrictions on use	:	Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.

2. Hazards identification**GHS classification**

Physical hazards	Explosives	classification not possible
	Flammable gases	No classification
	Aerosol	classification not possible
	Oxidizing gases	No classification
	Gases under pressure	No classification
	Flammable liquids	classification not possible
	Flammable solids	No classification
	Self-reactive substances and mixtures	classification not possible
	Pyrophoric liquids	classification not possible
	Pyrophoric solids	No classification
	Self-heating substances and mixtures	classification not possible
	Substances and mixtures which in contact with water emit flammable gases	classification not possible
	Oxidizing liquids	classification not possible
	Oxidizing solids	No classification
	Organic peroxides	classification not possible
	Corrosive to metals	classification not possible
	Desensitized explosives	classification not possible
Health hazards	Acute toxicity (oral)	classification not possible
	Acute toxicity (dermal)	classification not possible
	Acute toxicity (inhalation:gas)	classification not possible
	Acute toxicity (inhalation:vapors)	classification not possible
	Acute toxicity (inhalation:dust/mist)	classification not possible
	Skin corrosion/irritation	classification not possible
	Serious eye damage/eye irritation	classification not possible
	Respiratory sensitization	classification not possible
	Skin sensitization	classification not possible
	Germ cell mutagenicity	classification not possible
	Carcinogenicity	classification not possible
	Reproductive toxicity	classification not possible
	Specific target organ toxicity (single exposure)	classification not possible

Environmental hazards	Specific target organ toxicity (repeated exposure)	classification not possible
	Aspiration hazard	classification not possible
	Hazardous to the aquatic environment, short-term (acute)	Category 3
	Hazardous to the aquatic environment, long-term (chronic)	Category 3
	Hazardous to the ozone layer	classification not possible

Hazard statements (GHS JP) : Harmful to aquatic life with long lasting effects (H412)

Precautionary statements (GHS JP)

Prevention : Avoid release to the environment. (P273)

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

3. Composition/information on ingredients

Distinction of substance or mixture : Mixture

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
Zinc oxide	About 0.40%	ZnO	(1)-561	Existing Chemical Substance	1314-13-2
Hydrogen chloride	About 0.40%	HCl	(1)-215	Existing Chemical Substance	7647-01-0
Disodium dihydrogen ethylenediamine tetraacetic acid dihydrate	About 1.63%	C10H14N2Na2O8·2H2O	(2)-1265	Existing Chemical Substance	6381-92-6
Ammonia	About 0.15%	NH3	(1)-314	Existing Chemical Substance	1336-21-6
Water	About 97.42%	H2O	-	-	7732-18-5

The above concentration or concentration range are not product specification.

All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice/attention.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Get immediate medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Get immediate medical advice/attention.

5. Fire fighting measures

Suitable extinguishing media : Use proper extinguishing media depending on peripheral fire.

Unsuitable extinguishing media : Do not use a heavy water stream.

Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.

Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.
In the case of peripheral fire, quickly remove movable containers to safe places.
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.

Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Before entering, ventilate the area.
Do not let unauthorized persons come close to the area.
Immediately place the leakage area in isolation, with taking proper distances for all directions.
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

Environmental precautions

Environmental precautions : Avoid release to the environment.
Prevent entry to sewers and public waters.

Methods and Equipment for Containment and Cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.
Collect leaking and spilled liquid in sealable containers as far as possible.
Wash out the spilled area with large amounts of water.

7. Handling and storage

Handling

Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.

Precautions for safe handling : Do not eat, drink or smoke when using this product.
Thoroughly wash your hands and gargle after handling.
Ensure good ventilation of the work station.
Do not contact, breathe or swallow.

Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

Storage

Storage conditions : Store locked up.
Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources.

Material used in packaging/containers : Airtight container.

Technical measures : Comply with applicable regulations.

Storage temperature : Cool and dark place

8. Exposure controls / Personal protection equipment

Component name	Administration level (MHLW)	Exposure limits (JSOH)	
		Standard Value	JSOH OEL C
Zinc oxide	-	1 mg/m ³ Respirable dust 4 mg/m ³ Total dust	-
Hydrogen chloride	-	-	3 mg/m ³ 2 ppm

Component name	Concentration standard value (MHLW)		
	OEL TWA	OEL STEL	OEL C
Zinc oxide	0.1 mg/m ³ As respirable particle	-	-

Appropriate engineering controls

: Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

Protective equipment

Respiratory protection

: Protective mask

Hand protection

: Impervious protective gloves

Eye protection

: Protective glasses (general glasses, glasses with side-shields, goggles)

Skin and body protection

: Impervious aprons, Impervious work clothing, Impervious long boots

9. Physical and chemical properties

Physical state

: Liquid

Appearance

: Liquid

Color

: colorless

Odor

: Odorless

pH

: 5.1 (25°C)

Melting point

: No data available

Freezing point

: No data available

Boiling point

: No data available

Flash point

: No data available

Auto-ignition temperature

: No data available

Decomposition temperature

: No data available

Flammability

: No data available

Vapor pressure

: No data available

Relative density

: No data available

Density

: 1.01 g/cm³ (20°C)

Relative gas density

: No data available

Solubility

: No data available

Partition coefficient n-octanol/water (Log Pow)

: No data available

Explosive limits (vol %)

: No data available

Viscosity, kinematic

: No data available

Particle characteristics

: No data available

10. Stability and reactivity

Reactivity

: No data available

Chemical stability

: Stable under normal handling conditions.

Possibility of hazardous reactions

: Reacts with oxidizing agents to evolve toxic chlorine gas. When heated, evolves toxic hydrogen chloride gas and nitrogen oxides.

Conditions to avoid

: Sunlight, heat. Contact with oxidizing agents.

Incompatible materials

: Oxidizing agents

Hazardous decomposition products

: Chlorine, Hydrogen chloride, Nitrogen oxides

11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

As a product	
Acute toxicity (oral)	classification not possible
Acute toxicity (dermal)	classification not possible
Acute toxicity (inhalation)	vapors:classification not possible Gases:classification not possible dust, mist:classification not possible
Skin corrosion/irritation	classification not possible
Serious eye damage/irritation	classification not possible

As a product	
Respiratory sensitization	classification not possible
Skin sensitization	classification not possible
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	classification not possible
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible
Zinc oxide	
Acute toxicity (oral)	No classification
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	No classification
Acute toxicity (inhalation:dust/mist)	No classification
Skin corrosion/irritation	No classification
Serious eye damage/irritation	No classification
Respiratory sensitization	classification not possible
Skin sensitization	No classification
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	Category 2
STOT-single exposure	Category 1
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible
Hydrogen chloride	
Acute toxicity (oral)	Category 3
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	Category 3
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	Category 2
Skin corrosion/irritation	Category 1
Serious eye damage/irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	No classification
Germ cell mutagenicity	classification not possible
Carcinogenicity	No classification
Reproductive toxicity	classification not possible
STOT-single exposure	Category 1
STOT-repeated exposure	Category 1
Aspiration hazard	No classification
Disodium dihydrogen ethylenediamine tetraacetic acid dihydrate	
Acute toxicity (oral)	classification not possible
Acute toxicity (dermal)	classification not possible
Acute toxicity (gas)	classification not possible
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	classification not possible
Skin corrosion/irritation	classification not possible
Serious eye damage/irritation	classification not possible
Respiratory sensitization	classification not possible
Skin sensitization	classification not possible
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	classification not possible
STOT-repeated exposure	classification not possible

Disodium dihydrogen ethylenediamine tetraacetic acid dihydrate	
Aspiration hazard	classification not possible
Ammonia	
Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	classification not possible
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	classification not possible
Skin corrosion/irritation	Category 1
Serious eye damage/irritation	Category 1
Respiratory sensitization	classification not possible
Skin sensitization	classification not possible
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 1
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible
Water	
Acute toxicity (oral)	No classification
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	No classification
Acute toxicity (inhalation:dust/mist)	No classification
Skin corrosion/irritation	No classification
Serious eye damage/irritation	No classification
Respiratory sensitization	No classification
Skin sensitization	No classification
Germ cell mutagenicity	No classification
Carcinogenicity	No classification
Reproductive toxicity	No classification
STOT-single exposure	No classification
STOT-repeated exposure	No classification
Aspiration hazard	No classification

12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

As a product	
Hazardous to the aquatic environment, short-term (acute)	Category 3
Hazardous to the aquatic environment, long-term (chronic)	Category 3
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Ozone	classification not possible
Zinc oxide	
Hazardous to Aquatic Environment - Acute Hazard	Category 1
Hazardous to Aquatic Environment - Chronic Hazard	Category 1
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible

Hydrogen chloride	
Hazardous to Aquatic Environment - Acute Hazard	Category 1
Hazardous to Aquatic Environment - Chronic Hazard	No classification
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible
Disodium dihydrogen ethylenediamine tetraacetic acid dihydrate	
Hazardous to Aquatic Environment - Acute Hazard	classification not possible
Hazardous to Aquatic Environment - Chronic Hazard	classification not possible
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible
Ammonia	
Hazardous to Aquatic Environment - Acute Hazard	Category 3
Hazardous to Aquatic Environment - Chronic Hazard	No classification
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible
Water	
Hazardous to Aquatic Environment - Acute Hazard	No classification
Hazardous to Aquatic Environment - Chronic Hazard	No classification
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible

13. Disposal considerations

Ecology - waste materials : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.

Contaminated container and packaging : Empty the packaging completely prior to disposal.
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Packing group (IMDG) : Not applicable
Transport hazard class(es) (IMDG) : Not applicable

Air transport(IATA)

UN-No. (IATA) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Packing group (IATA) : Not applicable
Transport hazard class(es) (IATA) : Not applicable

Marine pollutant

: Not applicable

Regulations in Japan

Regulatory information by sea

: Not applicable

Regulatory information by air

: Not applicable

Special transport precautions

: When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

15. Regulatory information

National law

Chemical Substances Control Law

: Priority Assessment Chemical Substances (Law Article 2, Para.5)

Industrial Safety and Health Law

: Dangerous or Harmful Substances for Labeling of Chemical Name etc. (Act Art.57 Para.1, Enforcement Order, Art.18)
Dangerous or Harmful Substances for Notification of Chemical Name etc. on SDS (Act, Art.57-2 Para.1, Enforcement Order, Art.18-2)

Hydrogen chloride

Zinc oxide

Ammonia

Substances on dental health checkup (Act, Art.66, Para.3, Enforcement Order, Art.22 Item 3)

Concentration standard value setting substances (Ordinance on Industrial Safety and Health, Article 577-2, Para.2, Public Notice No. 177 of April 27, 2023, Public Notice No. 24 of April 27, 2023)

Japanese Poisonous and Deleterious Substances Control Law

: Not applicable

Water Pollution Prevention Law

: Hazardous Substances (Act, Art.2, Enforcement Order Art.2, Ministerial Ordinance to Provide for Effluent Standards, Art.1)
Designated Chemical Substances (Law Article 2, Paragraph 4, Enforcement Order Article 3-3)

Fire Service Law

: Not applicable

Air Pollution Control Law

: Hazardous substances (Article 2, Paragraph 1, Item 3 of the Law, Article 1 of the Enforcement Ordinance)
Specified substances (Article 17, Paragraph 1 of the Law, Article 10 of the Enforcement Ordinance)
Hazardous Air Pollutants (Central Environment Council Report No. 9)

Foreign Exchange and Foreign Trade Control Act

: Export Trade Control Ordinance appendix 1-16

Waterworks Law

: Hazardous Substances (Act Article 4 paragraph 2), Standard for Water Quality (Ministry Order No.101 of 2003)

Sewerage Law

: Substances for Water Quality Standard (Act Art.12-2 Para.2, Enforcement Order Art.9-4)

Japanese Pollutant Release and Transfer Register Law (PRTR Law)

: Class 1 Designated Chemical Substances (Act Art.2 para.2, Enforcement Order Art.1 Appended Table No.1)
Ethylenediaminetetraacetic acid and its potassium and sodium salts (1.6%)

Labor Standards Act

: Chemical Substances Causing Occupational Illnesses (Act Art.75, Para.2, Ordinance Attached Table 1-2, Item 4-1, MHLW Notification No.36 of 1978)

16. Other information

Data sources

: Handbook of 17625 Chemical Products, The Chemical Daily Co, Ltd. International Chemical Safety Cards.
National Institute of Technology and Evaluation (NITE).
2024 Emergency Response Guidebook (ERG 2024).

Other information

: The SDS is copyrighted material of Hayashi Pure Chemical Ind.,Ltd. This Safety Data Sheet is intended to be provided for business operators who handle chemical substance products of the relevant product and is not intended to assure safety in any way. The Safety Data Sheet does not verify all the information on the applicable chemical substance in the present time. With the recognition in that unknown danger constantly exists in the relevant chemical substance, the product shall be used in the principle of self-responsibility of the user with the highest priority to safety from transport and unpacking to disposal. When the relevant chemical substance is used, the user him/herself shall collect safety information and shall investigate laws and regulations at the place, organizations, countries, etc. where the

substance is actually used and give the highest priority to them. The Company shall take no responsibility for investigating state and local regulations and the user shall handle this problem on his/her own responsibility. In the event that SDS in Japanese and SDS translated into other languages exist, the document described in Japanese is prior to all other documents whether or not there is any difference in contents, and documents in other languages shall be references.