



## Safety Data Sheet

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

#### Product identifier:

Product name: Glutaraldehyde solution, 25% in water

SDS No. : 3437E-3

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

Research and Development

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

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

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### Section 2. Hazards identification

#### GHS classification and label elements of the product

#### Classification of the substance or mixture

##### HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Dermal): Category 4

Acute toxicity (Inhalation): Category 1

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Respiratory sensitization: Category 1

Skin sensitization: Category 1

Specific target organ toxicity – single exposure: Category 1 (respiratory system)

Specific target organ toxicity – repeated exposure: Category 1 (respiratory system)

##### ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 1

Hazardous to the aquatic environment, long-term (chronic): Category 2

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

#### Label elements



Signal word: Danger

#### HAZARD STATEMENT

Harmful if swallowed

Harmful in contact with skin

Fatal if inhaled

Causes severe skin burns and eye damage

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

Causes damage to organs (respiratory system)

Causes damage to organs through prolonged or repeated exposure (respiratory system)

Very toxic to aquatic life

Toxic to aquatic life with long lasting effects

#### PRECAUTIONARY STATEMENT

**Prevention**

- Avoid release to the environment.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- In case of inadequate ventilation wear respiratory protection.
- Use only outdoors or in a well-ventilated area.
- Wash contaminated parts thoroughly after handling.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear protective gloves, protective clothing or face protection.
- Wear eye protection/face protection.
- Do not eat, drink or smoke when using this product.

**Response**

- Collect spillage.
- Call a POISON CENTER/doctor/physician if you feel unwell.
- IF exposed or concerned: Call a POISON CENTER/doctor/physician.
- If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF ON SKIN: Wash with plenty of soap and water.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- If skin irritation or rash occurs: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Storage**

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

**Disposal**

- Dispose of contents/container in accordance with local/national regulation.

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**Section 3. Composition/information on ingredients****Mixture/Substance selection:****Mixture**

Ingredient name:Glutaraldehyde  
Content (%):25  
Chemical formula:C5H8O2  
Chemicals No, Japan:2-509  
CAS No.:111-30-8  
MW:100.12  
ECNO:203-856-5

Ingredient name:Water  
Content (%):75  
Chemical formula:H2O  
CAS No.:7732-18-5  
MW:18.02  
ECNO:231-791-2

Note : The figures shown above are not the specifications of the product. The content of products may exceed the figures shown above.

**Impurities**

Methanol  $\leq$ 0.26% (CAS No.67-56-1)



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**Section 4. First-aid measures****Descriptions of first-aid measures****General measures**

Get medical advice/attention if you feel unwell.

**IF INHALED**

Remove person to fresh air and keep comfortable for breathing.

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

Call a POISON CENTER/doctor/physician if you feel unwell.

**IF ON SKIN (or hair)**

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: 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 SWALLOWED**

Rinse mouth. Do NOT induce vomiting.

Call a POISON CENTER/doctor/physician if you feel unwell.

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**Section 5. Fire-fighting measures****Extinguishing media****Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.

**Unsuitable extinguishing media**

Unsuitable extinguishing media data is not available.

**Advice for firefighters****Specific fire-fighting measures**

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 full face piece operated positive pressure mode.

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**Section 6. Accidental release measures****Personnel precautions, protective equipment and emergency procedures**

Ventilate area until material pick up is complete.

Wear proper protective equipment.

**Environmental precautions**

Prevent spills from entering sewers, watercourses or low areas.

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

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

**Preventive measures for secondary accident**

Collect spillage.



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**Section 7. Handling and storage****Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

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

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

**Safety Measures**

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

When using do not eat, drink or smoke.

**Any incompatibilities**

See "10.Stability and Reactivity"

**Advice on general occupational hygiene**

Wash contaminated parts thoroughly after handling.

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

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing and wash it before reuse.

**Storage****Conditions for safe storage**

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

**Container and packaging materials for safe handling**

Glass

Stainless steel

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**Section 8. Exposure controls/personal protection****Control parameters****Adopted value**

(Glutaraldehyde)

ACGIH(2015) STEL: C 0.05ppm (URT, skin & eye irr; CNS impair)

(Methanol)

ACGIH(2009) TWA: 200ppm;

STEL: 250ppm (Headache; eye dam; dizziness; nausea)

**Notation**

(Glutaraldehyde)

DSEN;

(Methanol)

Skin

**OSHA-PEL**

(Methanol)

TWA: 200ppm, 260mg/m<sup>3</sup>

**Exposure controls****Appropriate engineering controls**

Do not use in areas without adequate ventilation.



- Eye wash station should be available.
- Washing facilities should be available.
- Individual protection measures
  - Respiratory protection
    - Wear respiratory protection.
  - Hand protection
    - Wear protective gloves.
  - Eye protection
    - Wear eye/face protection.

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## Section 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

- Physical state: Liquid
- Color: Colorless to pale yellow, Clear
- Odor: Characteristic odor
- Melting point/Freezing point data is not available.
- Boiling point or initial boiling point data is not available.
- Boiling range data is not available.
- Flammability (gases, liquids and solids) data is not available.
- Lower and upper explosion limit/flammability limit data is not available.
- Flash point data is not available.
- Auto-ignition temperature data is not available.
- Decomposition temperature data is not available.
- pH data is not available.
- Kinematic viscosity data is not available.
- Solubility:
  - Solubility in water: Soluble
  - n-Octanol/water partition coefficient data is not available.
  - Vapor pressure data is not available.
  - Density and/or relative density: 1.06-1.07
  - Relative vapor density (Air=1) data is not available.
  - Particle characteristics data is not available.

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## Section 10. Stability and Reactivity

- Reactivity
  - Not available.
- Chemical stability
  - Stable under normal storage/handling conditions.
- Possibility of hazardous reactions
  - (Glutaraldehyde)
    - The substance is a strong reducing agent. It reacts with strong bases, strong acids and strong oxidants. This generates fire and explosion hazard. (ICSC 0352)
- Conditions to avoid
  - Contact with incompatible materials.
  - Contact with fire source.
- Incompatible materials
  - Strong acids, Strong bases, Strong oxidizing agents
- Hazardous decomposition products
  - Carbon oxides



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**Section 11. Toxicological Information**

## Information on toxicological effects

## Acute toxicity

## Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

female rat LD50=77mg/kg (OECD TG 401, GLP) (CLH Report, 2013)

(Methanol)

human LD50=ca. 1400mg/kg (DFGOT vol.16, 2001)

## Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

rabbit LD50=403mg/kg (MOE Result of the initial environmental risk assessment of chemicals, 2017)

(Methanol)

rabbit LD50=15800mg/kg (DFGOT vol.16, 2001)

## Acute toxicity (Inhalation)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

vapor: male rat LC50=23.5ppm/4hr (OECD TG 403, GLP) (AICIS IMAP, 1994)

(Methanol)

vapor: rat LC50&gt;31500ppm/4hr (DFGOT vol.16, 2001)

## Irritant properties

## Skin corrosion/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

rabbit (OECD TG 404, GLP) necrosis and peeling (ECHA RAC Opinion, 2014)

## Serious eye damage/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

rabbit (GLP, 45% solution) cornea opacity and conjunctival swelling, not recovered after 21 days (ECHA RAC Opinion, 2014)

(Methanol)

rabbit category 2 : Draize test (EHC 196, 1997)

## Sensitization

## Respiratory sensitization

[Data for components of the product]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

cat. 1A; MHLW Risk Assessment Report, 2015; ECHA RAC Opinion, 2014 et al.

## Skin sensitization

[Data for components of the product]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

cat. 1A; MHLW Risk Assessment Report, 2015; ECHA RAC Opinion, 2014 et al.

Mutagenic effects data is not available.

## Carcinogenicity

[ACGIH]



(Glutaraldehyde)

A4(2015) : Not Classifiable as a Human Carcinogen

Reproductive toxicity

[Data for components of the product]

[GHS Cat. Japan, base data]

(Methanol)

cat. 1B; mouse : PATTY 5th, 2001

Specific target organ toxicity (STOT)

STOT-single exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

respiratory system (CLH Report, 2013 et al.)

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

(Methanol)

narcotic effect (PATTY 5th, 2001)

STOT-repeated exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Glutaraldehyde)

respiratory system (MHLW Risk Assessment Report, 2015)

Aspiration hazard data is not available.

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## Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Data for components of the product]

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

[GHS Cat. Japan, base data]

(Glutaraldehyde)

Crustacea (*Acartia tonsa*) LC50=0.07mg/L/48hr (EU CLP CLH, 2013)

(Methanol)

Crustacea (Brine shrimp) LC50=900.73mg/L/24hr (EHC196, 1998)

Hazardous to the aquatic environment, long-term (chronic)

[GHS Cat. Japan, base data]

(Glutaraldehyde)

Algae (*Desmodesmus subspicatus*) NOErC=0.025mg/L/72hr (EU CLP CLH, 2013)

Water solubility

(Glutaraldehyde)

miscible (ICSC, 2000)

(Methanol)

100 g/100 ml (PHYSPROP\_DB, 2009)

Persistence and degradability

[Data for components of the product]

(Glutaraldehyde)

Rapidly degradable (BOD\_Degradation : 59%; DOC\_Degradation : 86%; GC\_Degradation : 100%

(METI Existing Chemical Substances Safety Inspections Data, 1995))

Bioaccumulative potential

[Data for components of the product]

(Glutaraldehyde)



log Pow=-0.18 (PHYSPROP DB, 2005)

(Methanol)

log Pow=-0.82/-0.66 (ICSC, 2000)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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#### Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

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#### Section 14. Transport Information

UN Number or ID Number : 2922

UN Proper Shipping Name :

CORROSIVE LIQUID, TOXIC, N.O.S.

Class or division (Transport hazard class) : 8

Subsidiary hazard(s) : 6.1

Packing group : II

ERG GUIDE No.: 154

Special provisions No.: 274

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2922

UN Proper Shipping Name :

CORROSIVE LIQUID, TOXIC, N.O.S.

Class or division (Transport hazard class) : 8

Subsidiary hazard(s) : 6.1

Packing group : II

Special provisions No.: 274

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2922

UN Proper Shipping Name :

CORROSIVE LIQUID, TOXIC, N.O.S.

Class or division (Transport hazard class) : 8

Subsidiary hazard(s) : 6.1

Hazard labels : Corrosive & Toxic

Packing group : II

Special provisions No.: A3; A803

Environmental hazards

Marine pollutants (yes/no) : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Noxious Liquid Substances ; Cat. Y

Glutaraldehyde; Methanol

Non Noxious Liquid Substances ; Cat. OS

Water





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**Section 15. Regulatory Information**

Safety, health and environmental regulations/legislation specific for the substance or mixture

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

Chemicals listed in TSCA Inventory

Methanol; Glutaraldehyde; Water

Other regulatory information

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

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**Section 16. Other information**

GHS classification and labelling

Acute toxicity, Category 4: H302 Harmful if swallowed

Acute toxicity, Category 4: H312 Harmful in contact with skin

Acute toxicity, Category 1: H330 Fatal if inhaled

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

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

Respiratory sensitization, Category 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

Skin sensitization, Category 1: H317 May cause an allergic skin reaction

STOT – single exposure, Category 1: H370 Causes damage to organs

STOT – Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure

Hazardous to the aquatic environment, short-term (acute), Category 1: H400 Very toxic to aquatic life

Hazardous to the aquatic environment, long-term (chronic), Category 2: H411 Toxic to aquatic life with long lasting effects

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN IMDG Code, 2020 Edition (Incorporating Amendment 40-20)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2022 TLVs and BEIs. (ACGIH)

Supplier's data/information

General Disclaimer

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 Japan official data (NITE published in 2021).