



## Safety Data Sheet

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

Product identifier:

Product name: pH 5.0 Buffer solution

SDS No. : P0026E-2

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

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 1

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 2 (blood, respiratory system)

Specific target organ toxicity – repeated exposure: Category 2 (blood)

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H315 Causes skin irritation

H318 Causes serious eye damage

H361 Suspected of damaging fertility or the unborn child

H371 May cause damage to organs (blood, respiratory system)

H373 May cause damage to organs through prolonged or repeated exposure (blood)

PRECAUTIONARY STATEMENT

Prevention

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash contaminated parts thoroughly after handling.

P280 Wear protective gloves.

P280 Wear eye protection/face protection.

P280 Use personal protective equipment as required.

P270 Do not eat, drink or smoke when using this product.

Response



P314 Get medical advice/attention if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER/doctor/physician.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### Storage

P405 Store locked up.

#### Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

#### Specific adverse human health effects

See "11. Toxicological Information".

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### Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

| Ingredient name           | Content (%) | CAS No.   | Chemicals No, Japan | Chemical formula      |
|---------------------------|-------------|-----------|---------------------|-----------------------|
| Sodium acetate, anhydride | 11          | 127-09-3  | 2-692               | CH <sub>3</sub> COONa |
| Potassium nitrate         | 8.9         | 7757-79-1 | 1-449               | KNO <sub>3</sub>      |
| Acetic acid               | 4.1         | 64-19-7   | 2-688               | CH <sub>3</sub> COOH  |
| Water                     | 76          | 7732-18-5 | -                   | H <sub>2</sub> O      |

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

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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.

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

#### IF ON SKIN

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.

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.

## Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

## 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 a full facepiece operated in the positive pressure mode.

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**Section 6. Accidental release measures**

## Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

## Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

## 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



Do not handle until all safety precautions have been read and understood.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Wash hands et al thoroughly after handling.  
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.  
Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.  
Store locked up. (P405)  
Store in a cool, dry place. Do not store in direct sunlight.  
Storage in accordance with local/national regulation.

Container and packaging materials for safe handling

Use closed unbreakable containers.

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## Section 8. Exposure controls/personal protection

Control parameters

Control value and concentration standard value are not available in ISHA.

Adopted value

(Acetic acid)  
JOSH(1978) 10ppm; 25mg/m<sup>3</sup>  
(Acetic acid)  
ACGIH(2004) TWA: 10ppm;  
STEL: 15ppm (URT & eye irr; pulm func)

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

Recommend to use protective equipment in conformity with the standards.  
Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

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## Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties



Physical state: Liquid

Color: Colorless

Odor: Slightly pungent 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: about 5.0

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Soluble

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 1.12

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

Other information

Other information 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

(Sodium acetate, anhydride)

Decomposes on heating and on contact with strong acids. This produces acetic acid fumes.

Reacts violently with strong oxidants. The solution in water is a weak base. (ICSC 0565)

(Potassium nitrate)

Decomposes on heating. This increases fire hazard. The substance is a strong oxidant. It reacts with combustible and reducing materials. (ICSC 0184)

(Acetic acid)

The substance is a weak acid. Reacts violently with strong oxidants. This generates fire and explosion hazard. Reacts violently with strong bases, strong acids and many other compounds. Attacks some forms of plastic, rubber and coatings. (ICSC 0363)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Strong acids, Strong bases, Strong oxidizing agents, Reducing agents, Combustible materials

Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Acetic acid

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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]

(Potassium nitrate)

rat LD50=3750mg/kg (ECETOC TR 25, 1988)

(Acetic acid)

rat LD50=3310mg/kg (PATTY 5th, 2001)

[Company proprietary data]

(Sodium acetate, anhydride)

rat LD50=3530mg/kg

## Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Acetic acid)

rabbit LD50=1060mg/kg (PATTY 5th, 2001)

[Company proprietary data]

(Sodium acetate, anhydride)

rabbit LD50&gt;10g/kg

## Acute toxicity (Inhalation)

[Data for components of the product]

[Company proprietary data]

(Sodium acetate, anhydride)

rat LC50&gt;30000mg/m3/1hr

## Irritant properties

## Skin corrosion/irritation

[Product]

Category 2, Causes skin irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Acetic acid)

rabbit/guinea pig severe burn (PATTY 5th, 2001 et al)

## Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[GHS Cat. Japan, base data]

(Acetic acid)

rabbit permanent corneal damage (IUCLID, 2000)

[Company proprietary data]

(Sodium acetate, anhydride)

Category 2B

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

## Reproductive toxicity

[Product]



Category 2, Suspected of damaging fertility or the unborn child

[Data for components of the product]

[GHS Cat. Japan, base data]

(Potassium nitrate)

cat. 2; HSDB, 2005

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 2, May cause damage to organs

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Potassium nitrate)

blood (ECETOC TR 27, 1988)

(Acetic acid)

blood, respiratory system (ACGIH, 2004)

STOT-repeated exposure

[Product]

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

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Potassium nitrate)

blood (ECETOC TR 27, 1988)

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]

(Potassium nitrate)

Crustacea (Daphnia magna) TLm=490mg/L/48hr (IUCLID, 2000)

(Acetic acid)

Crustacea (Daphnia magna) EC50=65mg/L/48hr (Aquire, 2010)

[Company proprietary data]

(Sodium acetate, anhydride)

Crustacea (Daphnia magna) EC50>1000mg/L/48hr

Water solubility

(Sodium acetate, anhydride)

46.5 g/100 ml (20°C) (ICSC, 2006)

(Potassium nitrate)

35.7 g/100 ml (25°C) (ICSC, 2001)

(Acetic acid)

miscible (ICSC, 2010)

Persistence and degradability

[Data for components of the product]

(Acetic acid)



BOD\_Degradation : 74% (METI existing chemical safety inspections)  
Bioaccumulative potential  
[Data for components of the product]  
(Acetic acid)  
log Pow=-0.17 (PHYSPROP DB, 2005)  
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  
Dispose of contents/container as industrial waste. Accordance with local/national regulation.

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**Section 14. Transport Information**

UN Number or ID Number : Not regulated  
IMDG Code (International Maritime Dangerous Goods Regulations)  
UN Number or ID Number : Not regulated  
IATA (Dangerous Goods Regulations)  
UN Number or ID Number : Not regulated  
Environmental hazards  
Marine pollutants (yes/no) : no

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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  
Acetic acid; Sodium acetate, anhydride; Water; Potassium nitrate  
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**

References and sources for data  
Globally Harmonized System of classification and labelling of chemicals, UN  
Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN  
IMDG Code, 2022 Edition (Incorporating Amendment 41-22)  
IATA Dangerous Goods Regulations (65th Edition) 2024  
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)  
2024 TLVs and BEIs. (ACGIH)  
JIS Z 7252 : 2019  
JIS Z 7253 : 2019  
2023 Recommendation on TLVs (JSOH)





## Supplier's data/information

## General Disclaimer

Please provide SDS to customers for selling or transferring.

All chemicals have unknown hazard. Handle the product with care.

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 2022).