



Safety Data Sheet

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

Product identifier:

Product name: Formaldehyde neutral buffer solution 10%
SDS No. : E0165E-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

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 4
Respiratory sensitization: Category 1
Skin sensitization: Category 1
Germ cell mutagenicity: Category 2
Carcinogenicity: Category 1A
Reproductive toxicity: Category 1B
Specific target organ toxicity – single exposure: Category 2 (nervous system, central nervous system, organ of vision, respiratory system, systemic toxicity)
Specific target organ toxicity – repeated exposure: Category 2 (central nervous system, organ of vision, respiratory system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 3

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H332 Harmful if inhaled
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317 May cause an allergic skin reaction
H341 Suspected of causing genetic defects
H350 May cause cancer
H360 May damage fertility or the unborn child
H371 May cause damage to organs (nervous system, central nervous system, organ of vision, respiratory system, systemic toxicity)



H373 May cause damage to organs through prolonged or repeated exposure (central nervous system, organ of vision, respiratory system)

H402 Harmful to aquatic life

PRECAUTIONARY STATEMENT**Prevention**

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

P273 Avoid release to the environment.

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

P284 In case of inadequate ventilation wear respiratory protection.

P271 Use only outdoors or in a well-ventilated area.

P264 Wash contaminated parts thoroughly after handling.

P280 Wear protective gloves.

P272 Contaminated work clothing should not be allowed out of the workplace.

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.

P312 Call a POISON CENTER/doctor/physician if you feel unwell.

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

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

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

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".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name	Content (%)	CAS No.	Chemicals No, Japan	Chemical formula
Formaldehyde	4.0	50-00-0	2-482	CH ₂ O
Methanol	1.1	67-56-1	2-201	CH ₃ OH
di-sodium hydrogen phosphate	0.64	7558-79-4	1-497	HNa ₂ O ₄ P
Sodium dihydrogen phosphate	0.33	7558-80-7	1-497	NaH ₂ PO ₄
Water	94	7732-18-5	-	H ₂ O

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

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

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.

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.

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.

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.

Use only outdoors or in a well-ventilated area.

Recommend to use protective equipment in conformity with the standards.

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.

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 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

Glass

Polyethylene

etc.

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(Formaldehyde)

ACGIH(2017) TWA: 0.1ppm;

STEL: 0.3ppm (URT & eye irr; URT cancer)

(Methanol)



ACGIH(2009) TWA: 200ppm;

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

Notation

(Formaldehyde)

DSEN; RSEN

(Methanol)

Skin

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 (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.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: Irritant 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: nonflammability

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH: about 7

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: 1.02

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

Particle characteristics data is not available.

Other information

Other information is not available.



Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Formaldehyde)

The gas mixes well with air, explosive mixtures are easily formed.

The substance polymerizes in contact with alkalies and if dissolved in water. Upon heating, toxic fumes are formed. Reacts violently with strong oxidants, strong acids and strong bases. This generates explosion hazard. (ICSC 0275)

(Methanol)

The vapour mixes well with air, explosive mixtures are easily formed.

Reacts violently with strong oxidants, acids and reducing agents. This generates fire and explosion hazard. (ICSC 0057)

(di-sodium hydrogen phosphate)

Decomposes on heating. This produces toxic fumes. Reacts violently with strong acids.(ICSC 1129)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Acids, Strong bases, Strong oxidizing agents, Reducing agents

Hazardous decomposition products

Carbon oxides

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

rat LD50=600-700mg/kg, 800mg/kg (SIDS, 2003)

(Methanol)

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

[Company proprietary data]

(di-sodium hydrogen phosphate)

rat LD50=17000mg/kg (RTECS)

Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

rabbit LD50=270mg/kg (HSDB, Access on Jun. 2017)

(Methanol)

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

Acute toxicity (Inhalation)

[Product]



Category 4, Harmful if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

gas: rat LC50=480ppm/4hr (SIDS, 2003)

(Methanol)

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

Irritant properties

Skin corrosion/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

human skin irritation (ATSDR Addendum, 2010); EU CLP Skin Corr. 1B (ECHA CL Invt., Access on Jun. 2017)

Serious eye damage/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

human/rabbit eyes irritation (EHC 89, 1989)

(Methanol)

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

Sensitization

Respiratory sensitization

[Product]

Category 1, May cause allergy or asthma symptoms or breathing difficulties if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

cat. 1; JSOH airway Gr.2, 2007; CICAD 40, 2002; DFGOT, 2014, Access on Jun. 2017

Skin sensitization

[Product]

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

cat. 1; JSOH Skin Gr.1, 2007; EU CLP Skin Sens. 1 (ECHA CL Invt., Access on Jun. 2017)

Germ cell mutagenicity

[Product]

Category 2, Suspected of causing genetic defects

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

cat. 2; NITE Initial Risk Assessment Report, 2006; NICNAS, 2006; ATSDR, 1999

Carcinogenicity

[Product]

Category 1A, May cause cancer

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formaldehyde)

cat.1A; IARC Gr.1 (IARC 100F, 2012); NTP K (NTP RoC, 14th, 2016); ACGIH A1 (ACGIH 7th, 2017)



[IARC]

(Formaldehyde)

Group 1 : Carcinogenic to humans

[ACGIH]

(Formaldehyde)

A1(2017) : Confirmed Human Carcinogen

[NTP]

(Formaldehyde)

Known : Known to be Human Carcinogens

[EU]

(Formaldehyde)

Category 1B; Substances presumed to have carcinogenic potential for humans

Reproductive toxicity

[Product]

Category 1B, May damage fertility or the unborn child

[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

[Product]

Category 2, May cause damage to organs

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Formaldehyde)

nervous system, respiratory system (NITE Initial Risk Assessment Report, 2006; SIDS, 2003;

EHC 89, 1989)

(Methanol)

central nervous system, organ of vision, systemic toxicity (DFGOT vol.16, 2001)

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

(Methanol)

narcotic effect (PATTY 5th, 2001)

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]

(Formaldehyde)

central nervous system, respiratory system (JSOH, 2007; ACGIH 7th, 2015; NITE Initial Risk

Assessment Report, 2006; CICAD 40, 2002; CaPSAR, 1999, EHC 89, 1989; MOE Environmental Risk Assessment for Chemical Substances, vol.1, 2002)

(Methanol)

central nervous system, organ of vision (ACGIH 7th, 2001)

Aspiration hazard data is not available.



Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Product]

Category 3, Harmful to aquatic life

[Data for components of the product]

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

[GHS Cat. Japan, base data]

(Formaldehyde)

Crustacea (Daphnia magna) LC50=2mg/L/24hr (WHO EHC, 1989)

(Methanol)

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

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

[GHS Cat. Japan, base data]

(Formaldehyde)

Crustacea (Ceriodaphnia dubia) NOEC (survival rate)=1.0mg/L/7days (NICNAS PEC, 2006)

Water solubility

(Formaldehyde)

Miscible (ICSC, 2012)

(Methanol)

100 g/100 ml (PHYSPROP_DB, 2009)

(di-sodium hydrogen phosphate)

7.7 g/100 ml (20°C) (ICSC, 2006)

Persistence and degradability

[Data for components of the product]

(Formaldehyde)

Rapidly degradable (BOD_Degradation: 91% (CSCL DB, 1989))

Bioaccumulative potential

[Data for components of the product]

(Formaldehyde)

log Pow=0.35 (PHYSPROP DB, 2005)

(Methanol)

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

(di-sodium hydrogen phosphate)

log Pow=-5.8 (ICSC, 2006)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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 as industrial waste. Accordance with local/national regulation.



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
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Noxious Liquid Substances ; Cat. Y
Formaldehyde; Methanol
Non Noxious Liquid Substances ; Cat. OS
Water

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
Formaldehyde; Methanol; di-sodium hydrogen phosphate; Sodium dihydrogen phosphate; Water
Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

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, 2020 Edition (Incorporating Amendment 40-20)
IATA Dangerous Goods Regulations (64th Edition) 2023
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2023 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).