Safety Data Sheet

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

Product identifier:

Product name: 10% Formalin neutral buffer solution

Reference number(SDS):96769jis_J_E2-1

Product type:

Reagent

Recommended use of the chemical and restrictions on use

Recommended uses: Research and Development

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 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, respiratory organs)

Specific target organ toxicity - repeated exposure: Category 2 (central nervous system, respiratory organs)

ENVIRONMENT HAZARDS

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

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

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements

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
H373-May cause damage to organs through prolonged or repeated exposure
H402-Harmful to aquatic life

Precautionary statements

Prevention

Obtain, read and follow all safety instructions before use.
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 hands thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use water mist, alcohol-resistant foam, dry powder, CO2 to extinguish.
Specific treatment.
IF exposed or concerned: Get emergency medical help immediately.
Get medical help.
IF exposed or concerned, get medical advice.
Get medical help if you feel unwell.
If experiencing respiratory symptoms: Get emergency medical help immediately.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of water.
If skin irritation or rash occurs: Get medical help.
Take off contaminated clothing and wash it before reuse.

Storage

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:Formaldehyde
Content (%):ca. 3.7 (Formalin: ca. 10%)
Chemical formula:CH2O
ENCS:2-482
CAS No.:50-00-0
MW:30.03
EC No.:200-001-8

Ingredient name:Methanol
Content (%):ca. 0.75
Chemical formula:CH4O
ENCS:2-201
CAS No.:67-56-1
MW:32.04
EC No.:200-659-6

Ingredient name:Sodium dihydrogen phosphate
Content (%):ca. 0.35
Chemical formula:H2NaO4P
ENCS:1-497
CAS No.:7558-80-7
MW:119.98
EC No.:231-449-2

Ingredient name:sodium hydrogen phosphate
Content (%):0.65
Chemical formula:HNa2O4P
ENCS:1-497
CAS No.:7558-79-4
MW:141.96
EC No.:231-448-7

Ingredient name:Water
Content (%):Residual quantity of the ingredient mentioned above.
Chemical formula:H2O
CAS No.: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

Get medical help.

IF exposed or concerned: Get emergency medical help immediately.

IF INHALED

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

If experiencing respiratory symptoms: Get emergency medical help immediately.

IF INHALED: Get medical help.

IF ON SKIN

IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.

IF ON SKIN: Wash with plenty of water.

If skin irritation or rash occurs: Get medical help.

IF IN EYES

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

If eye irritation persists: Get medical help.

IF SWALLOWED

Rinse mouth.

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

Information on indication of any immediate medical attention and special treatment needed is not available.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, alcohol-resistant foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

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

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

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

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

Methods and materials for containment and cleaning up

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

Preventive measures for secondary accident

Collect spillage.

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 dust/fume/gas/mist/vapors/spray.

(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

Obtain, read and follow all safety instructions before use.

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 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. 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.

Container and packaging materials for safe handling data is not available.

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

(Formaldehyde)

Japan control value 0.1ppm

(Methanol)

Japan control value 200ppm

Occupational exposure limit values

JSOH

(Formaldehyde)

0.1ppm, 0.12mg/m3; (Ceiling) 0.2ppm, 0.24mg/m3

(Methanol)

200ppm; 260mg/m3

ACGIH

(Formaldehyde)

TWA: 0.1ppm; STEL: 0.3ppm (URT & eye irr; URT cancer)

(Methanol)

TWA: 200ppm; STEL: 250ppm (Headache; eye dam; dizziness; nausea)

Notation

(Formaldehyde)

DSEN; RSEN

(Methanol)

Skin

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.

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 safety glasses with side-shields.

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 data is not available.

Lower and upper explosion limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH: Neutral

Dynamic viscosity data is not available.

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.

Vapor density data is not available.

Density and/or relative density data is not available.

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

Relative density of the Vapor/air - mixture at 20℃ (Air = 1) data is not available.

Particle characteristics data is not available.

Other information

Critical temperature data is not available.

Evaporation rate data is not available.

VOC 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

Oxidizing agents.

Hazardous decomposition products

Carbon oxides. Phosphorus oxides. Sodium 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]

(Formaldehyde)

rat LD50: 600 - 700 mg/kg (test substance: 2 - 4% Aqueous solution) (source: NITE)

(Methanol)

human LD50: ca. 1400 mg/kg (source: NITE)

Acute toxicity (Dermal)

[Product]

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

[Data for components of the product]

[NITE-CHRIP]

(Formaldehyde)

rabbit LD50: 270 mg/kg (test substance: Formalin) (source: NITE)

(Methanol)

rabbit LD50: 15800 mg/kg (source: NITE)

Acute toxicity (Inhalation)

[Product]

Category 4, Harmful if inhaled

[Data for components of the product]

[NITE-CHRIP]

(Formaldehyde)

gas: rat LC50: 480 ppm (4-hour) (source: NITE)

(Methanol)

vapor: rat LC50: > 22500 ppm (converted 4-hour equivalent value: > 31500 ppm) (source: NITE)

Skin corrosion/irritation

[Product]

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

[Data for components of the product]

[NITE-CHRIP]

(Formaldehyde)

Category 1 (source: NITE)

Serious eye damage/irritation

[Product]

Classification not possible (Insufficient data available or no data available).
[Data for components of the product]
[NITE-CHRIP]
(Formaldehyde)
Category 2 (source: NITE)
(Methanol)
Category 2 (source: NITE)
Respiratory or skin sensitization
Respiratory sensitization
[Product]
Category 1, May cause allergy or asthma symptoms or breathing difficulties if inhaled
[Data for components of the product]
[NITE-CHRIP]
(Formaldehyde)
Category 1 (source: NITE)
Skin sensitization
[Product]
Category 1, May cause an allergic skin reaction
[Data for components of the product]
[NITE-CHRIP]
(Formaldehyde)
Category 1A (source: NITE)
Germ cell mutagenicity
[Product]
Category 2, Suspected of causing genetic defects
[Data for components of the product]
[NITE-CHRIP]
(Formaldehyde)
Category 2 (source: NITE)
Carcinogenicity
[Product]
Category 1A, May cause cancer
[Data for components of the product]
[NITE-CHRIP]
(Formaldehyde)
Category 1A (source: NITE)
[IARC]
(Formaldehyde)
Group 1 : Carcinogenic to humans
[ACGIH]
(Formaldehyde)
A1: Confirmed Human Carcinogen
[JSOH]
(Formaldehyde)
Group 2A: The agents which are probably or possibly carcinogenic to humans
[EPA]
(Formaldehyde)
Group B1; Probable human carcinogen(1986)

[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]
[NITE-CHRIP]
(Methanol)
Category 1B (source: NITE)

Specific target organ toxicity - single exposure
[Product]
Category 2, May cause damage to organs
[Data for components of the product]
[NITE-CHRIP]
(Formaldehyde)
Category 1 (nervous system, respiratory organs) (source: NITE)
(Methanol)
Category 3 (Narcotic effects) (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]
(Formaldehyde)
Category 1 (central nervous system, respiratory organs) (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]
Category 3, Harmful to aquatic life
[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[NITE-CHRIP]
(Formaldehyde)
Algae (Desmodesmus subspicatus) 72-hour ErC50: 4.89 mg a.i./L (a.i.: active ingredient) (source: NITE)
(Methanol)
Fish (Bluegill) 96-hour LC50: 15400 mg/L (source: NITE)
Crustacea (Brown shrimp) 96-hour LC50: 1340 mg/L (source: NITE)
Hazardous to the aquatic environment, long-term (chronic)
[NITE-CHRIP]
(Formaldehyde)

Crustacea (Ceriodaphnia dubia) 7-day NOEC: 1.0 mg/L (source: NITE)

Water solubility

[Data for components of the product]

(Formaldehyde)

not poorly water-soluble (400 g/L) (source: NITE)

(Methanol)

not poorly water-soluble (1000 g/L) (source: NITE)

(sodium hydrogen phosphate)

7.7 g/100 mL (20℃) (source: ICSC, 2006)

Persistence and degradability

[Data for components of the product]

(Formaldehyde)

Rapidly degradable (Degradation rate: 87 - 96% (by BOD)) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

(Formaldehyde)

log Kow: 0.35 (source: NITE)

(Methanol)

log Pow: -0.74 (source: ICSC, 2018)

(sodium hydrogen phosphate)

log Pow: -5.8 (source: 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

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.

Avoid release to the environment.

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 : Not regulated
UN Proper Shipping Name : Not regulated
Transport hazard class(es) :Not regulated
Packing group :Not regulated

IMDG Code (International Maritime Dangerous Goods Regulations)

UN number : Not regulated
UN Proper Shipping Name : Not regulated
Transport hazard class(es) : Not regulated
Packing group : Not regulated

IATA (Dangerous Goods Regulations)

UN number : Not regulated
UN Proper Shipping Name : Not regulated
Transport hazard class(es) : Not regulated
Packing group : Not regulated

Marine pollutants (yes/no) : no

Maritime transport in bulk according to IMO instruments

MARPOL Annex II - Noxious Liquid Substances

Noxious Liquid Substances ; Cat. Y
Formaldehyde; Methanol
Non Noxious Liquid Substances ; Cat. OS
Water

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

Carcinogenicity: cat.1, 1A, 1B
Formaldehyde
Reproductive toxicity: cat.1, 1A, 1B
Methanol
Specific target organ toxicity - repeated exposure: cat.1
Formaldehyde

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)

Formaldehyde; Methyl alcohol[Methanol]

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

Chemicals listed in TSCA Inventory

50-00-0; 67-56-1; 7558-79-4; 7558-80-7; 7732-18-5

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Formaldehyde

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

H332-Acute toxicity, Category 4: H332 Harmful if inhaled
H334-Respiratory sensitization, Category 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317-Skin sensitization, Category 1: H317 May cause an allergic skin reaction
H341-Germ cell mutagenicity, Category 2: H341 Suspected of causing genetic defects
H350-Carcinogenicity, Category 1A: H350 May cause cancer
H360-Reproductive toxicity, Category 1B: H360 May damage fertility or the unborn child
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
H402-Hazardous to the aquatic environment, short-term (acute), Category 3: H402 Harmful to aquatic life

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 4.39 (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 FY2024).