



Safety Data Sheet

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

Product identifier:

Product name: Propionaldehyde

SDS No. : 6465E-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

e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

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

Specific target organ toxicity – single exposure: Category 3(Narcosis)

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

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 3

Label elements



Signal word: Danger

HAZARD STATEMENT

Highly flammable liquid and vapor

Harmful if swallowed

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

May cause damage to organs(respiratory system)

May cause drowsiness or dizziness

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

Harmful to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.



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

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

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

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

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

Response

In case of fire: Use appropriate media to extinguish.

Get medical advice/attention if you feel unwell.

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

IF exposed or concerned: 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 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 eye irritation persists: Get medical advice/attention.

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

IF SWALLOWED: Rinse mouth.

Storage

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

Disposal

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

Specific Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Propionaldehyde

Content (%):97(min)

Chemical formula:CH₃CH₂CHO

Chemicals No, Japan:2-486

CAS No.:123-38-6

MW:58.08

ECNO:204-623-0

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



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 (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.

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

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

Bucket of water or tank of water

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

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.

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.

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.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

(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/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.

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

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(Propionaldehyde)

ACGIH(2002) TWA: 20ppm (URT irr)

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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

- Physical state: Liquid
- Color: Colorless
- Odor: Pungent odor
- Melting point/Freezing point: -81°C
- Boiling point or initial boiling point: (Propionaldehyde) 49°C
- Boiling range data is not available.
- Flammability (gases, liquids and solids) data is not available.
- Lower and upper explosion limit/flammability limit:
 - Lower explosion limit: 2.6 vol %
 - Upper explosion limit: 17.0 vol %
- Flash point: (Propionaldehyde) -30°C
- Auto-ignition temperature: (Propionaldehyde) 207°C
- Decomposition temperature data is not available.
- pH data is not available.
- Kinematic viscosity data is not available.
- Solubility:
 - Solubility in water: 20 g/100 ml
 - n-Octanol/water partition coefficient: $\log P_{ow} 0.59$
 - Vapor pressure: 31.3 kPa (20°C)
 - Density and/or relative density: 0.8
 - Relative vapor density (Air=1): 2
 - Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.3
 - Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

- Not available.

Chemical stability

- Stable under normal storage/handling conditions.

Possibility of hazardous reactions

- The vapour is heavier than air and may travel along the ground; distant ignition possible.
- The substance can presumably form explosive peroxides. The substance may polymerize under the influence of acids, bases, amines and oxidants. This generates fire or explosion hazard. Decomposes on burning. This produces toxic gases and irritating fumes. (ICSC 0550)

Conditions to avoid

- Contact with incompatible materials.
- Contact with fire source.

Incompatible materials

- Acids, Bases, Oxidizing agents, Amines

Hazardous decomposition products

- Carbon oxides, Explosive peroxides



11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Propionaldehyde)

rat LD50=800–1600mg/kg (ACGIH, 2002)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Propionaldehyde)

vapor: rat LC50=9200ppm/4hr (ACGIH, 2002)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Propionaldehyde)

rabbit/guinea pig/human mild to severe irritation (ACGIH, 2002)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Propionaldehyde)

rabbit recover within 10 days (SIDS, 2007)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

STOT

STOT–single exposure

[cat.2]

[GHS Cat. Japan, base data]

(Propionaldehyde)

respiratory system (ACGIH 7th, 2002)

[cat.3 (drow./dizz.)]

[GHS Cat. Japan, base data]

(Propionaldehyde)

narcotic effect (ACGIH 7th, 2002)

STOT–repeated exposure

[cat.2]

[GHS Cat. Japan, base data]

(Propionaldehyde)

respiratory system (ACGIH 7th, 2002)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Harmful to aquatic life

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Propionaldehyde)

Fish (*Pimephales promelas*) LC50=14mg/L/96hr (SIDS, 2007)

Water solubility

(Propionaldehyde)

20 g/100 ml (ICSC, 2003)

**Persistence and degradability**

(Propionaldehyde)

Degrade rapidly (BOD_Degradation : 94%/28 days; TOC_Degradation : 97%/28 days;

GC_Degradation: 100%/28 days (MITI official bulletin, 1990))

Bioaccumulative potential

(Propionaldehyde)

log Pow=0.59 (ICSC, 2003)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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.

14. Transport Information

UN No. or ID No.: 1275

UN Proper Shipping Name :

PROPIONALDEHYDE

Class or division (Transport hazard class) : 3

Packing group : II

ERG GUIDE No.: 129P

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1275

Proper Shipping Name :

PROPIONALDEHYDE

Class or division : 3

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1275

Proper Shipping Name :

PROPIONALDEHYDE

Class or division : 3

Hazard labels : Flamm.liquid

Packing group : II

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

Propionaldehyde

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Propionaldehyde

Other regulatory information



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

16. Other information

GHS classification and labelling

Flam. Liq. 2: H225 Highly flammable liquid and vapor

Acute Tox. 4: H302 Harmful if swallowed

Acute Tox. 4: H332 Harmful if inhaled

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2: H319 Causes serious eye irritation

STOT SE 2: H371 May cause damage to organs

STOT SE 3: H336 May cause drowsiness or dizziness

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

Aquatic Acute 3: H402 Harmful to aquatic life

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 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 2020).