



Safety Data Sheet

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

Product identifier:

Product name: 2-Propanol

SDS No. : 6478E-4

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.

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Division: Chemical Safety Management Department

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Section 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

Serious eye damage/eye irritation: Category 2

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 1(central nervous system, systemic toxicity)

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

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

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

Label elements

Signal word: Danger

HAZARD STATEMENT

Highly flammable liquid and vapor

Causes serious eye irritation

Suspected of damaging fertility or the unborn child

Causes damage to organs(central nervous system, systemic toxicity)

May cause respiratory irritation

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

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

PRECAUTIONARY STATEMENT**Prevention**

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.
IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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.

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.

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

Ingredient name:2-Propanol
Content (%):99(min)
Chemical formula:C3H8O
Chemicals No, Japan:2-207
CAS No.:67-63-0
MW:60.10
ECNO:200-661-7

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.
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.
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**

In case of fire, use water mist, alcohol-resistant 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.

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.

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.

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.

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

Iron

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(2-Propanol)

ACGIH(2001) TWA: 200ppm;

STEL: 400ppm (Eye & URT irr; CNS impair)

OSHA-PEL

(2-Propanol)

TWA: 400ppm, 980mg/m³

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.



Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless, Clear

Odor: Characteristic odor

Melting point/Freezing point: -90°C Boiling point or initial boiling point: about 82°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 vol %

Upper explosion limit: 12 vol %

Flash point: (C.C.)(2-Propanol) 11.7°C Auto-ignition temperature: 456°C

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: $\log Pow 0.05$ Vapor pressure: 4.4 kPa (20°C)

Density and/or relative density: 0.79

Relative vapor density (Air=1): 2.1

Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.05

Particle characteristics data is not available.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

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

Reacts with strong oxidants. This generates explosion hazard. Decomposes on heating. This produces irritating fumes and flammable and toxic gas. Attacks some plastics and rubber.

(ICSC 0554)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Strong oxidizing 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]

(2-Propanol)



rat LD50=5480mg/kg (EHC 103, 1990)

Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(2-Propanol)

rabbit LD50=12870mg/kg (EHC 103, 1990)

Irritant properties

Skin corrosion/irritation data is not available.

Serious eye damage/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(2-Propanol)

rabbit (PATTY 6th, 2012 et al)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[IARC]

(2-Propanol)

Group 3 : Not classifiable as to its carcinogenicity to humans

[ACGIH]

(2-Propanol)

A4(2001) : Not Classifiable as a Human Carcinogen

Reproductive toxicity

[Data for components of the product]

[GHS Cat. Japan, base data]

(2-Propanol)

cat. 2; PATTY 6th, 2012

Specific target organ toxicity (STOT)

STOT-single exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(2-Propanol)

central nervous system, systemic toxicity (MOE Environmental Risk Assessment for Chemical Substances vol.6, 2005)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(2-Propanol)

respiratory tract irritation (MOE Environmental Risk Assessment for Chemical Substances vol.6, 2005)

STOT-repeated exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(2-Propanol)

blood system (EHC 103, 1990)

[cat.2]

[GHS Cat. Japan, base data]

(2-Propanol)

spleen, liver, respiratory system (EHC 103, 1990)

Aspiration hazard data is not available.



Section 12. Ecological Information**Toxicity****Aquatic toxicity**

[Data for components of the product]

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(2-Propanol)

Fish (Atheriniformes) LC50 >100mg/L/96hr (MOE Japan, 1997)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(2-Propanol)

Crustacea (Daphnia magna) NOEC >100mg/L/21days (MOE Japan, 1997)

Water solubility

(2-Propanol)

In water, infinitely soluble (25°C) (HSDB, 2013)

Persistence and degradability

[Data for components of the product]

(2-Propanol)

Rapidly degradable (Degradation : 86% (METI existing chemical safety inspections, 1993))

Bioaccumulative potential

[Data for components of the product]

(2-Propanol)

log Pow=0.05 (ICSC, 1999)

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

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

Section 14. Transport Information

UN No. or ID No.: 1219

UN Proper Shipping Name :

ISOPROPANOL (ISOPROPYL ALCOHOL)

Class or division (Transport hazard class) : 3

Packing group : II

ERG GUIDE No.: 129

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1219

Proper Shipping Name :

ISOPROPANOL (ISOPROPYL ALCOHOL)

Class or division : 3

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1219

Proper Shipping Name :

ISOPROPANOL (ISOPROPYL ALCOHOL)



Class or division : 3
Hazard labels : Flamm.liquid
Packing group : II
Special provisions No.: A180

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

2-Propanol

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Z

2-Propanol

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

2-Propanol

Other regulatory information

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

Section 16. Other information**GHS classification and labelling**

Flammable liquids, Category 2: H225 Highly flammable liquid and vapour

Serious eye damage/eye irritation, Category 2: H319 Causes serious eye irritation

Reproductive toxicity, Category 2: H361 Suspected of damaging fertility or the unborn child

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

STOT – single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.

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

STOT – Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

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, 2018 Edition (Incorporating Amendment 39–18)

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



KISHIDA

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