

Safety Data Sheet

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

Product identifier:

Product name: Allyl alcohol

Reference number(SDS): 65020jis_E-2

Product type:

Reagent

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

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

Self-reactive substances and mixtures: Type G

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Acute toxicity (Dermal): Category 1

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2A

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

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

Specific target organ toxicity – repeated exposure: Category 1 (liver)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 3

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

Label elements

Signal word: Danger

HAZARD STATEMENT

H225–Highly flammable liquid and vapor

H301–Toxic if swallowed

H310–Fatal in contact with skin

H330–Fatal if inhaled

H315–Causes skin irritation

H319–Causes serious eye irritation

H370–Causes damage to organs

H335–May cause respiratory irritation

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H372-Causes damage to organs through prolonged or repeated exposure

H400-Very toxic to aquatic life

H412-Harmful to aquatic life with long lasting effects

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 vapors.

In case of inadequate ventilation wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Do not get in eyes, on skin, or on clothing.

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 other than water to extinguish.

Collect spillage.

Get medical advice/attention if you feel unwell.

Immediately call a POISON CENTER/doctor/physician.

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 immediately all 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: Rinse mouth. Immediately call a POISON CENTER/doctor/physician.

Storage

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

Store locked up.

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**

Common name, synonyms: 2-Propen-1-ol

Ingredient name: Allyl alcohol

Content (%): 99.0 <

Chemical formula: C₃H₆O

Chemicals No, Japan: 2-260

CAS No.: 107-18-6

MW: 58.08

4. First-aid measures

Descriptions of first-aid measures

General measures

- Get medical advice/attention if you feel unwell.
- Immediately call a POISON CENTER/doctor/physician.
- Keep victim warm and quiet.
- Call emergency medical service.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

IF INHALED

- Remove person to fresh air and keep comfortable for breathing.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- 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 skin irritation occurs: Get medical advice/attention.
- In case of burns, immediately cool affected skin for as long as possible with cold water.
- Do not remove clothing if adhering to skin.
- Remove and isolate contaminated clothing and shoes.

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.
- If victim is conscious, give 1 – 2 glasses of water.
- Induce vomiting (ONLY IN CONSCIOUS PERSONS!).
- Immediately call a POISON CENTER/doctor/physician.
- Call a POISON CENTER/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Nausea. Abdominal pain. Headache. Vomiting. Unconsciousness.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Pain. Blurred vision. Loss of vision. Severe deep burns.
Photophobia. Blisters.
※May be absorbed into the skin.

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.

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

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

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

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

EVACUATION : Spill: See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Do not touch or walk through spilled material.

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, et al), then place in a chemical waste container.

Use clean non-sparking tools to collect absorbed material.

All equipment used when handling the product must be grounded.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe vapors/fume.

(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.
- Use personal protective equipment as required.
- When using do not eat, drink or smoke.

Any incompatibilities

- Strong acids, Strong oxidizing agents, Carbon tetrachloride should not be mixed with the chemicals.

Advice on general occupational hygiene

- Do not get in eyes, on skin, or on clothing.
- Wash contaminated parts thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Take off immediately all contaminated clothing and wash it before reuse.

Storage**Conditions for safe storage**

- Store in a well-ventilated place. Keep container tightly closed.
- Keep cool. Protect from sunlight.
- Store in accordance with local/national regulation.
- Store locked up.

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.

8. Exposure controls/personal protection**Control parameters**

Control value in MHLW is not available.

Adopted value

- JSOH(1978) 1ppm; 2.4mg/m³ (dermal)
- ACGIH(1999) TWA: 0.5ppm (Eye & URT irr)
- Notation...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.
- Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

- Wear protective gloves. Recommended material(s): butyl rubber, viton
- Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

- Wear safety glasses with side-shields.
- Wear eye/face protection.

Skin and body protection

- Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Physical state: Liquid

Color: Colorless
Odor: Irritant odor
Odor threshold: 0.78 ppm ; 1.95~5.00 mg/m³
Melting point/Freezing point: -129°C
Boiling point or initial boiling point: 97°C
Boiling range data is not available.
Flammability (gases, liquids and solids): Ignitable
Lower and upper explosion limit/flammability limit:
 Lower explosion limit: 2.5 vol %
 Upper explosion limit: 18.0 vol %
Flash point: (C.C.) 21°C
Auto-ignition temperature: 378°C
Decomposition temperature data is not available.
Self-Accelerating Decomposition Temperature/SADT data is not available.
pH data is not available.
Dynamic viscosity: 1.218mPas(25°C)
Kinematic viscosity data is not available.
Solubility:
 Solubility in water: Miscible
 Solubility in solvent: Miscible with alcohol, chloroform, ether, petroleum ether.
n-Octanol/water partition coefficient: log Pow 0.17
Vapor pressure: 2.5 kPa (20°C)
VOC data is not available.
Evaporation rate data is not available.
Density and/or relative density: 0.846~0.856 g/ml (20°C)
Relative vapor density (Air=1): 2.0
Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.03
Critical temperature: ca. 266.6°C
Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Flammable.

Possibility of hazardous reactions

Reacts with carbon tetrachloride, nitric acid and chlorosulfonic acid. This generates fire and explosion hazard.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat. Sparks.

Incompatible materials

Strong acids, Strong oxidizing agents, Carbon tetrachloride

Hazardous decomposition products

Carbon oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

rat LD50=64mg/kg (ACGIH 7th, 2001 et al.)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

rabbit LD50=45mg/kg (DFGOT vol. 15, 2001; PATTY 6th, 2012)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

vapor: rat LC50=0.300~0.330mg/L/4hr (124~137ppm/4hr) (SIDS, 2016)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

human : corrosion and deep muscle pain (DFGOT vol. 15, 2001; PATTY 6th, 2012)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

rabbit : irritation (SIDS, 2016; NITE primary risk assessment, 2007; PATTY 6th, 2012);

human : corneal burn and temporary blindness, but both were reversible symptoms.

(Environmental Risk Assessment for Chemical Substances by MOE vol. 3, 2004; ACGIH 7th, 2001)

Allergenic and sensitizing effects data is not available.

Germ cell mutagenicity

[GHS Cat. Japan, base data]

<in vivo>

rat (Dominant lethal test, Micronucleus assay): Negative (SIDS, 2016 et al.)

mouse (Micronucleus assay) : Negative (SIDS, 2016 et al.)

<in vitro>

Bacterial reverse mutation test : Positive (SIDS, 2016 et al.)

Mammalian cells test (gene mutation) : Positive (NITE primary risk assessment, 2007 et al.)

mouse lymphoma test : Positive (NITE primary risk assessment, 2007 et al.)

Mutagen [MOHL_J Notice]

(Allyl alcohol)

Reverse-mutation assay in bacteria (Ames test) : Positive

Carcinogenicity

ACGIH-A4(1999) : Not Classifiable as a Human Carcinogen

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

central nervous system; liver; kidney (ACGIH 7th, 2001; NITE primary risk assessment, 2007; SIDS, 2016)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

respiratory tract irritation (DFGOT vol. 15, 2001; SIDS, 2016)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

liver (NTP TOX 48, 2006; Environmental Risk Assessment for Chemical Substances by MOE vol. 3, 2004;

NITE primary risk assessment, 2007; SIDS, 2016)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H400—Very toxic to aquatic life

H412—Harmful to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

Crustacea (Daphnia magna) LC50=0.25mg/L/96hr (Environmental Risk Assessment for Chemical Substances by MOE vol. 3, 2004)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

Crustacea (Daphnia magna) NOEC (Reproductive inhibition)=0.919mg/L/21days (Environmental Risk Assessment for Chemical Substances by MOE vol. 3, 2004; NITE primary risk assessment, 2007)

Water solubility

miscible (ICSC, 2000)

Persistence and degradability

Degrade rapidly [BOD_Degradation : 86% (J-CHECK, 1976)]

Bioaccumulative potential

log Pow=0.17 (PHYSPROP Database, 2010)

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., UN CLASS

UN No. or ID No.: 1098

UN Proper Shipping Name : ALLYL ALCOHOL

Class or division (Transport hazard class) : 6.1

Subsidiary hazard(s) : 3

Packing group : I

ERG GUIDE No.: 131

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1098

Proper Shipping Name : ALLYL ALCOHOL

Class or division : 6.1

Subsidiary hazard(s) : 3

Packing group : I

IATA Dangerous Goods Regulations

UN No.: 1098

Proper Shipping Name : ALLYL ALCOHOL

Class or division : 6.1

Subsidiary hazard(s) : 3

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Allyl alcohol

Hazardous to the aquatic environment – acute hazard: cat.1

Allyl alcohol

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

Allyl alcohol(Y-28)

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Allyl alcohol

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.

16. Other information

GHS classification and labelling

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

Self-react. G

H301–Acute Tox. 3: H301 Toxic if swallowed

H310–Acute Tox. 1: H310 Fatal in contact with skin

H330–Acute Tox. 2: H330 Fatal if inhaled

H315–Skin Irrit. 2: H315 Causes skin irritation

H319–Eye Irrit. 2A: H319 Causes serious eye irritation

H370–STOT SE 1: H370 Causes damage to organs

H335–STOT SE 3: H335 May cause respiratory irritation

H372–STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

H400–Aquatic Acute 1: H400 Very toxic to aquatic life

H412–Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects

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)

JIS Z 7252 : 2019

Allyl alcohol, JUNSEI CHEMICAL CO., LTD., 65020jis_E-2, 2021/08/25

JIS Z 7253 : 2019

2020 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.11 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIIP"

(https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

Definitions and Abbreviations

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)

JSOH (Japan Society for Occupational Health)

EU (European Union)

EC50 (Effective Concentration, 50%)

NOEC (No Observed Effect Concentration)

BOD (Biochemical Oxygen Demand)

COD (Chemical Oxygen Demand)

BCF (Bioconcentration Factor)

anh (anhydride)

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 2019).