

## Safety Data Sheet

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

#### Product identifier:

Product name: Acrylonitrile

Reference number(SDS):10145jis\_J\_E1-2

#### Product type:

Reagent

#### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the product: Research and Development

Uses advised against: 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

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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

Acute toxicity (Oral): Category 3

Acute toxicity (Dermal): Category 2

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 1

Skin sensitization: Category 1

Carcinogenicity: Category 1B

Reproductive toxicity: Category 1B

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

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

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

Specific target organ toxicity – repeated exposure: Category 1 (nervous system, respiratory organs, blood system, liver, kidney, testis)

##### ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 2

Hazardous to the aquatic environment, long-term (chronic): Category 2

(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  
H318-Causes serious eye damage  
H317-May cause an allergic skin reaction  
H350-May cause cancer  
H360-May damage fertility or the unborn child  
H370-Causes damage to organs  
H335-May cause respiratory irritation  
H336-May cause drowsiness or dizziness  
H372-Causes damage to organs through prolonged or repeated exposure  
H401-Toxic to aquatic life  
H411-Toxic to aquatic life with long lasting effects

#### PRECAUTIONARY STATEMENT

##### Prevention

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
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.  
Contaminated work clothing should not be allowed out of the workplace.  
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.  
Collect spillage.  
Specific treatment is urgent.  
Specific treatment is required.  
Get medical advice/attention if you feel unwell.  
IF exposed or concerned: Get medical advice/attention.  
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.

Acrylonitrile, JUNSEI CHEMICAL CO., LTD., 10145jis\_J\_E1-2, 01/May/2025

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 or rash occurs: Get medical advice/attention.

Take off immediately all contaminated clothing and wash it before reuse.

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.

Rinse mouth.

IF SWALLOWED: 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.

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### Section 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Substance

Ingredient name:Acrylonitrile

Content (%):99.0

Chemical formula:C3H3N

ENCS:2-1513

CAS No.:107-13-1

MW:53.06

EC No.:203-466-5

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

#### Stabilizing additives

Stabilizer : Hydroquinone monomethyl ether 35-45ppm

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### Section 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.

Immediately call a POISON CENTER/doctor/physician.

IF INHALED: 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.

Gently wash with plenty of soap and water.

Wash with plenty of soap and water.

In case of burns, immediately cool affected skin for as long as possible with cold water.

Do not remove clothing if adhering to skin.

Immediately call a POISON CENTER/doctor/physician.

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

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.

Immediately call a POISON CENTER/doctor/physician.

If eye irritation persists: Get medical advice/attention.

**IF SWALLOWED**

Rinse mouth.

Immediately call a POISON CENTER/doctor/physician.

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

Induce vomiting (ONLY IN CONSCIOUS PERSONS!).

Give a slurry of activated charcoal in water to drink.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Dizziness. Headache. Nausea. Shortness of breath. Vomiting. Weakness. Convulsions. Chest tightness. Abdominal pain.

(Symptoms when skin and/or eye contact)

Redness of the skin. Pain. Blisters. Redness of the eyes.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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## 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

Do not use direct water jet.

### Specific hazards arising from the substance or mixture

Containers may explode when heated.

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 a full facepiece operated in the positive pressure mode.

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## Section 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.

Do not touch or walk through spilled material.

**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”.

### Environmental precautions

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

### Methods and materials for containment and cleaning up

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Use clean non-sparking tools to collect absorbed material.

All equipment used when handling the product must be grounded.

Collect leaking and spilled liquid in covered containers as far as possible.

### 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.

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## Section 7. Handling and storage

### Precautions for safe handling

#### Preventive measures

(Exposure Control for handling personnel)

Do not breathe vapors.

(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

Obtain special instructions before use.

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

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, Bases, Strong oxidizing agents 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.

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

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.

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## Section 8. Exposure controls/personal protection

### Control parameters

Control value and Concentration standard value under ISHA

Japan control value 2ppm

Occupational Exposure Limit

JSOH

2ppm; 4.3mg/m<sup>3</sup> (skin)

ACGIH

TWA: 2ppm (CNS impair; LRT 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

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Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).

In case of inadequate ventilation wear respiratory protection.

Recommended respiratory protection: Self-Contained Breathing Apparatus (SCBA)

#### 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 protection

Wear chemical safety goggles.

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.

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## Section 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless ~ Pale yellow

Odor: Irritant odor

Odor threshold data is not available.

Melting point/Freezing point:  $-84^{\circ}\text{C}$

Boiling point or initial boiling point:  $77^{\circ}\text{C}$

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: 3.0 vol %

Upper explosion limit: 17.0 vol %

Flash point:  $-1^{\circ}\text{C}(\text{C.C.})$

Auto-ignition temperature:  $481^{\circ}\text{C}$

Decomposition temperature data is not available.

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

pH data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 7 g/100 mL ( $20^{\circ}\text{C}$ )

Solubility in solvent data is not available.

n-Octanol/water partition coefficient:  $\log P_{ow} 0.25$

Vapor pressure: 11.0 kPa ( $20^{\circ}\text{C}$ )

Vapor density data is not available.

Density and/or relative density:  $0.803 \sim 0.808 \text{ g/mL}(20^{\circ}\text{C})$

Relative vapor density (Air=1): 1.8

Relative density of the Vapor/air – mixture at  $20^{\circ}\text{C}$  (Air = 1): 1.05

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.

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**Section 10. Stability and Reactivity****Reactivity**

Runaway polymerization may occur without stabilizer/inhibitor or when heated.

**Chemical stability**

Stable under normal storage/handling conditions.

Highly flammable.

**Possibility of hazardous reactions**

The vapour is heavier than air and may travel along the ground; distant ignition possible.

The substance polymerizes due to heating and under the influence of light and bases. This generates fire or explosion hazard.

Decomposes on heating. This produces toxic fumes.

Reacts violently with strong acids and strong oxidants.

Attacks plastics and rubber.

**Conditions to avoid**

Contact with incompatible materials.

Open flames. Heating. Sparks. Light.

**Incompatible materials**

Strong acids. Bases. Strong oxidizing agents.

**Hazardous decomposition products**

Carbon oxides. Nitrogen oxides. Hydrogen cyanide.

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**Section 11. Toxicological Information****Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)**

[Product]

Category 3, Toxic if swallowed

[Data for components of the product]

[NITE-CHRIP]

rat LD50: 72 mg/kg (source: NITE)

**Acute toxicity (Dermal)**

[Product]

Category 2, Fatal in contact with skin

[Data for components of the product]

[NITE-CHRIP]

rat LD50: 148 mg/kg (source: NITE)

**Acute toxicity (Inhalation)**

[Product]

Category 2, Fatal if inhaled



[Data for components of the product]

[NITE-CHRIP]

vapor: rat LC50: 470 mg/m<sup>3</sup> (4-hour) (source: NITE)

#### Irritant properties

Skin corrosion/irritation

[Product]

Category 2, Causes skin irritation

[Data for components of the product]

[NITE-CHRIP]

Category 2 (source: NITE)

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[NITE-CHRIP]

Category 1 (source: NITE)

#### Sensitization

Respiratory sensitization

[Product]

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

[Data for components of the product]

No data available.

Skin sensitization

[Product]

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[NITE-CHRIP]

Category 1 (source: NITE)

#### Germ cell mutagenicity

[Product]

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

[Data for components of the product]

Chromosome aberration test :PositiveCHL/IU cells; MHLW Mutagenicity study results

#### Carcinogenicity

[Product]

Category 1B, May cause cancer

[Data for components of the product]

[NITE-CHRIP]

Category 1B (source: NITE)

[IARC]

Group 1 : Carcinogenic to humans

[ACGIH]

A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans

[JSOH]

Group 2A: The agents which are probably or possibly carcinogenic to humans

[NTP]

RAHC : Reasonably Anticipated to be Human Carcinogens

[EU]

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]

Category 1B (source: NITE)

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 1, Causes damage to organs

Category 3, May cause respiratory irritation

Category 3, May cause drowsiness or dizziness

[Data for components of the product]

[NITE-CHRIP]

Category 1 (nervous system, liver, kidney, blood system), Category 3 (Respiratory tract irritation), Category 3 (Narcotic effects) (source: NITE)

STOT-repeated exposure

[Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE-CHRIP]

Category 1 (nervous system, respiratory organs, blood system, liver, kidney, testis) (source: NITE)

Aspiration hazard

[Product]

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

[Data for components of the product]

No data available.

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## Section 12. Ecological Information

### Ecotoxicity

#### Aquatic toxicity

[Product]

Category 2, Toxic to aquatic life

Category 2, Toxic to aquatic life with long lasting effects

[Data for components of the product]

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

[NITE-CHRIIP]

Fish (Ctenopharyngodon idella) 96-hour LC50: 1.18 mg/L (source: NITE)

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

[NITE-CHRIIP]

Fish (Pimephales promelas) 35-day NOEC (20% reduction in wet weight): 0.34 mg/L (source: NITE)

Water solubility

[Data for components of the product]

7g/100 mL (20°C) (source: ICSC, 2001)

Persistence and degradability

[Data for components of the product]

Not rapidly degradable (Degradation rate: 14.7% (by BOD)) (OECD TG 301C, GLP) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

log Pow: 0.25 (source: ICSC, 2001)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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### 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 in accordance with local/national regulation.

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### Section 14. Transport Information

UN No., UN CLASS

UN Number or ID Number : 1093

UN Proper Shipping Name :

ACRYLONITRILE, STABILISED

Class or division (Transport hazard class) : 3

Subsidiary hazard(s) : 6.1

Packing group : I

ERG GUIDE No.: 131P

Special provisions No.: 386

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1093

UN Proper Shipping Name :

ACRYLONITRILE, STABILISED

Class or division (Transport hazard class) : 3

Subsidiary hazard(s) : 6.1

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Packing group : I

Special provisions No.: 386

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1093

UN Proper Shipping Name :

ACRYLONITRILE, STABILISED

Class or division (Transport hazard class) : 3

Subsidiary hazard(s) : 6.1

Hazard labels : Flamm. liquid &amp; Toxic

Packing group : I

Special provisions No.: A209

Environmental hazards

Marine pollutants (yes/no) : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Noxious Liquid Substances ; Cat. Y

Acrylonitrile

Flammable Liquid

Acrylonitrile

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

Carcinogenicity: cat.1, 1A, 1B

Acrylonitrile

Reproductive toxicity: cat.1, 1A, 1B

Acrylonitrile

Specific target organ toxicity – repeated exposure: cat.1

Acrylonitrile

Hazardous to the aquatic environment – long-term (chronic): cat.1, 2

Acrylonitrile

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## Section 15. Regulatory Information

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

Mutagenic Chemical Substances [MHLW\_J Notice]

Acrylonitrile

Labor Standards Act, Japan

Chemical substances or compounds (including alloys) causing disease (item (iv)-1 of Appended Table 1-2 of Regulation)

Acrylonitrile

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

Chemicals listed in TSCA Inventory

107-13-1

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Acrylonitrile

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.

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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.

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Section 16. Other information

GHS classification and labelling

H225-Flammable liquids, Category 2: H225 Highly flammable liquid and vapour  
H301-Acute toxicity, Category 3: H301 Toxic if swallowed  
H310-Acute toxicity, Category 2: H310 Fatal in contact with skin  
H330-Acute toxicity, Category 2: H330 Fatal if inhaled  
H315-Skin corrosion/irritation, Category 2: H315 Causes skin irritation  
H318-Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage  
H317-Skin sensitization, Category 1: H317 May cause an allergic skin reaction  
H350-Carcinogenicity, Category 1B: H350 May cause cancer  
H360-Reproductive toxicity, Category 1B: H360 May damage fertility or the unborn child  
H370-STOT – single exposure, Category 1: H370 Causes damage to organs  
H335-STOT – single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.  
H336-STOT – single exposure, Category 3, Narcotic effects: H336 May cause drowsiness or dizziness.  
H372-STOT – Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure  
H401-Hazardous to the aquatic environment, short-term (acute), Category 2: H401 Toxic to aquatic life  
H411-Hazardous to the aquatic environment, long-term (chronic), Category 2: H411 Toxic to aquatic life with long lasting effects

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 (66th Edition) 2025  
2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)  
2025 TLVs and BEIs. (ACGIH)  
JIS Z 7252 : 2019  
JIS Z 7253 : 2019  
2024 Recommendation on TLVs (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 4.33  
(<https://www.asahi-ghs.com/>)  
NITE Chemical Risk Information Platform "NITE-CHRIP"  
([https://www.chem-info.nite.go.jp/chem/chrip/chrip\\_search/systemTop](https://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop))  
GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.1) (May. 2024, METI)

**Abbreviations and acronyms**

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)  
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)  
JSOH (Japan Society for Occupational Health)  
ISHA (Industrial Safety and Health Act in Japan)  
CSCL (Chemical Substances Control Law in Japan)  
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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).