

Safety Data Sheet

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

Product identifier:

Product name: Acrylamide

Reference number(SDS): 10110jis_J_E1-2

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

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Acute toxicity (Dermal): Category 3

Serious eye damage/eye irritation: Category 2A

Skin sensitization: Category 1

Germ cell mutagenicity: Category 1B

Carcinogenicity: Category 1B

Reproductive toxicity: Category 1B

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

Specific target organ toxicity – repeated exposure: Category 1(nervous system, eye, haemal system, genetic organs (men))

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 3

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H301-Toxic if swallowed

H311-Toxic in contact with skin

H319-Causes serious eye irritation

H317-May cause an allergic skin reaction

H340-May cause genetic defects

H350-May cause cancer

H360-May damage fertility or the unborn child

H370-Causes damage to organs

H372-Causes damage to organs through prolonged or repeated exposure

H402-Harmful to aquatic life

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.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash contaminated parts thoroughly after handling.
- Wear protective gloves or protective clothing.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear eye protection/face protection.
- Use personal protective equipment as required.
- Do not eat, drink or smoke when using this product.

Response

- Get medical advice/attention if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- Call a POISON CENTER/doctor/physician if you feel unwell.
- IF exposed or concerned: Call a POISON CENTER/doctor/physician.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation or rash 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 locked up.

Disposal

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

3. Composition/information on ingredients**Mixture/Substance selection:****Substance****Common name, synonyms: 2-Propenamide**

Ingredient name: Acrylamide
Content (%): 98.0 <
Chemical formula: C₃H₅NO
Chemicals No, Japan: 2-1014
CAS No.: 79-06-1
MW: 71.08
ECNO: 201-173-7

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.
- Keep victim warm and quiet.
- Call emergency medical service.
- 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.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

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.

For minor skin contact, avoid spreading material on unaffected 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.

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)

Abdominal pain. Cough. Sore throat. Weakness.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Redness of the skin. Pain.

※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.

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.

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.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

Acrylamide, JUNSEI CHEMICAL CO., LTD., 10110jis_J_E1-2, 16/Feb/2022

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.

Fire or Explosion : Runoff may pollute waterways.

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.

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.

Keep out of low areas.

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.

(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.

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 bases, Oxidizing agents should not be mixed with the chemicals.

Advice on general occupational hygiene

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.

8. Exposure controls/personal protection

Control parameters

Control value

Japan control value (2009) $\leq 0.1 \text{ mg/m}^3$

Adopted value

JSOH(2004) 0.1 mg/m^3 (dermal)

ACGIH(2020) TWA: 0.03 mg/m^3 (IFV) (CNS & PNS impair; cancer)

Notation...Skin; DSEN

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.

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: Crystals

Color: White

Odor: None

Odor threshold data is not available.

Melting point/Freezing point: 84.5°C

Boiling point or initial boiling point: 192.6°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point: (c.c.) 138°C

Auto-ignition temperature: 424°C

Decomposition temperature: $175 \sim 300^\circ\text{C}$

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

pH: $5.0 \sim 7.0$ (50g/L, 20°C)

Dynamic viscosity: 2.71 mPas (50% aqueous solution, 25°C)

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 204 g/100 ml (25°C)

Solubility in solvent: Soluble in ethanol, diethyl ether and acetone

n-Octanol/water partition coefficient: $\log \text{Pow} = -0.67$

Vapor pressure: 0.9 Pa (25°C)

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density: 1.13g/cm³(20°C)

Relative vapor density (Air=1): 2.45

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

Critical temperature data is not available.

Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Runaway polymerization may occur when heated.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

The substance polymerizes violently due to heating or under the influence of light and oxidants.

It reacts with strong bases and strong oxidants.

Decomposes on burning. This produces toxic and corrosive fume.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat. Light.

Incompatible materials

Strong bases, Oxidizing agents

Hazardous decomposition products

Carbon oxides, Nitrogen oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

rat LD50=124mg/kg (EHC 49, 1985);

rat LD50=175~203mg/kg (EU-RAR, 2002);

rat LD50=180~294mg/kg (ATSDR, 2012)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

rat LD50=252mg/kg (ATSDR, 2012);

rat LD50=400mg/kg (EHC 49, 1985);

rabbit LD50=941mg/kg (ATSDR, 2012)

Labor standard law, Japan; Toxic

Acrylamide

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

human/rabbit : Mild irritation (EU-RAR, 2002; ACGIH 7th, 2005)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

rabbit : irritation (EU-RAR No.24, 2002);

EU CLP eyes Irrit. 2 (ECHA CL Inventory, Access on May 2017)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

cat. 1; human (ACGIH 7th, 2005); guinea pig (EU-RAR No.24, 2002);

JSOH Gr.2; EU CLP Skin Sens.1 (ECHA CL Inventory, Access on May 2017)

Germ cell mutagenicity

[GHS Cat. Japan, base data]

cat. 1B; NITE Initial Risk Assessment Report, 2007; ATSDR, 2012; EU-RAR, 2002; DFGOT vol.25, 2009

Mutagen [MOHL_J Notice]

Acrylamide

Carcinogenicity

[GHS Cat. Japan, base data]

cat.1B; EU Carc. 1B (ECHA CL Inventory, Access on May 2016) et al.

[IARC]

Group 2A : Probably carcinogenic to humans

[ACGIH]

A2 : Confirmed Animal Carcinogen with Unknown Relevance to Humans (2020)

[EPA]

L; Likely to be carcinogenic to humans (2005)

[NTP]

R : Reasonably Anticipated to be Human Carcinogens

[JSOH]

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

[EU]

Category 1B; Substances presumed to have carcinogenic potential for humans

Reproductive toxicity

[GHS Cat. Japan, base data]

cat. 1B; JSOH Gr.2 (OEL Documentations by JSOH, 2014),

EU Repr. 2 (ECHA CL Inventory, Access on May 2017)

Teratogenic effects data is not available.

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

nervous system (EU-RAR, 2002; NITE primary risk assessment, 2007; ATSDR, 2012; Risk Assessment Report by FSCJ, 2016)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

nervous system; eye; blood system; male genitalia (MOE risk assessment vol.1, 2002; NITE primary risk assessment, 2007; IRIS Tox. Review, 2010; NTP TR575, 2012)

Aspiration hazard data is not available.

Information on other hazards

OEL (Occupational Exposure Limits)

FSCJ (Food Safety Commission of Japan)

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H402-Harmful to aquatic life

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

Algae (*Selenastrum capricornutum*) EC50 (Growth inhibition)=33.8mg/L/72hr

(NITE Initial Risk Assessment Report, 2007; NICNAS PEC, 2002)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

Algae (*Selenastrum capricornutum*) NOEC (Growth inhibition)=16mg/L/72hr

(OECD SIDS, 2001; NICNAS PEC, 2002; EURAR, 2002; NITE Initial Risk Assessment Report, 2007)

Water solubility

204g/100 ml (25°C) (ICSC, 2013)

Persistence and degradability

BOD_Degradation : 70% (J-CHECK, 1999)

Bioaccumulative potential

log Pow=-0.67 (PHYSPROP DB, 2005)

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.: 2074

UN Proper Shipping Name : ACRYLAMIDE

Class or division (Transport hazard class) : 6.1

Packing group : III

ERG GUIDE No.: 153P

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2074

Proper Shipping Name : ACRYLAMIDE

Class or division : 6.1

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 2074

Proper Shipping Name : ACRYLAMIDE

Class or division : 6.1

Hazard labels : Toxic

Packing group : III

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

Germ cell mutagenicity: cat.1, 1A, 1B

Acrylamide

Carcinogenicity: cat.1, 1A, 1B

Acrylamide

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

Acrylamide

Specific target organ toxicity – repeated exposure: cat.1

Acrylamide

Maritime transport in bulk according to IMO instruments

Not applicable to Maritime transport in bulk according to IMO instruments

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Acrylamide

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

H301–Acute Tox. 3: H301 Toxic if swallowed

H311–Acute Tox. 3: H311 Toxic in contact with skin

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

H317–Skin Sens. 1: H317 May cause an allergic skin reaction

H340–Muta. 1B: H340 May cause genetic defects

H350–Carc. 1B: H350 May cause cancer

H360–Repr. 1B: H360 May damage fertility or the unborn child

H370–STOT SE 1: H370 Causes damage to organs

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

H402–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)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2021 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.15 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(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 2020).