

Safety Data Sheet

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

Product identifier:

Product name: 1,2-Dichloroethane

Product code(SDS NO): 34090jis_E-2

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-Cho, Koshigaya, Saitama 343-0844, Japan

Division: Quality Assurance Department

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL HAZARDS

Flammable liquids: Category 2

HEALTH HAZARDS

Acute toxicity Oral: Category 4

Acute toxicity Inhalation: Category 3

Serious eye damage/eye irritation: Category 2B

Carcinogenicity: Category 1B

Specific target organ toxicity – single exposure: Category 1 (central nervous system, respiratory system, cardiovascular system, blood system, liver, kidney, gastrointestinal tract)

Specific target organ toxicity – single exposure: Narcosis Category 3

Specific target organ toxicity – repeated exposure: Category 1 (nervous system, liver, cardiovascular system, thyroid)

Specific target organ toxicity – repeated exposure: Category 2 (blood system, kidney)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment – acute hazard: Category 3

(Note) GHS classification without description: Not applicable/Out of classification/Not classifiable

Label elements



Signal word: Danger

HAZARD STATEMENT

Highly flammable liquid and vapor

Harmful if swallowed

Toxic if inhaled

Causes eye irritation

May cause cancer

Causes damage to organs (central nervous system, respiratory system, cardiovascular system, blood system, liver, kidney, gastrointestinal tract) after single exposure

May cause drowsiness or dizziness

Causes damage to organs (nervous system, liver, cardiovascular system, thyroid) through prolonged or

repeated exposure

May cause damage to organs (blood system, kidney) through prolonged or repeated exposure

Harmful to aquatic life

PRECAUTIONARY STATEMENT

Prevention

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

Avoid release to the environment.

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe vapors.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves and face protection.

Use personal protective equipment as required.

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

Response

In case of fire: Use appropriate media for extinction.

Get medical advice/attention if you feel unwell.

Call a POISON CENTER or doctor/physician.

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/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.

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

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.

Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Common name, synonyms: EDC

Ingredient name: 1,2-Dichloroethane

Content(%): 99.0 <

Chemical formula: C₂H₄Cl₂

Chemicals No, Japan: 2-54

CAS No.: 107-06-2

MW: 98.96

ECNO: 203-458-1

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.

Call a POISON CENTER or doctor/physician.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

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

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/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. Do NOT induce vomiting.

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

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Sore throat. Nausea. Vomiting. Cough. Headache. Dizziness. Drowsiness. Unconsciousness.

※Inhalation may cause lung oedema.

(Symptoms when skin and/or eye contact)

Redness. Pain.

Indication of any immediate medical attention and special treatment needed

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort.

Rest and medical observation are therefore essential.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO₂.

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/flame resistant/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 after material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to the 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.

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.

A vapor suppressing foam may be used to reduce vapors.

7. Handling and storage**Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe vapors.

(Protective measures against fire & explosion)

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Exhaust/ventilator

Exhaust/ventilator should be available.

Safety treatments

Avoid contact with skin.

Avoid contact with eyes.

Avoid breathing vapor.

Safety Measures/Incompatibility

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 or face protection.

Wear protective gloves and face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities**Recommendation for storage**

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

Keep cool. Protect from sunlight.

Store locked up.

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

Japan control value (1995) ≤ 10 ppm

Adopted value

JSOH(1984) 10ppm; 40mg/m³

ACGIH(1977) TWA: 10ppm (Liver dam; nausea)

OSHA-PEL

TWA 50ppm; C 100ppm

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. Recommended material(s): impermeable or chemical resistant rubber
- 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.

Safety and Health measures

- Wash ... thoroughly after handling.
- Do not eat, drink or smoke when using this product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical properties

- Appearance: Viscous liquid
- Color: Colorless-clear
- Odor: Characteristic odor
- pH data N.A.

Phase change temperature

- Initial Boiling Point/Boiling point: 83.5°C
- Melting point/Freezing point: -35.7°C
- Decomposition temperature: 300°C
- Flash point: (C.C.) 13°C
- Auto-ignition temperature: 413°C
- Explosive properties: Flammability or explosive limit
 - lower limit: 6.2 vol %
 - upper limit: 16 vol %

Vapor pressure: 8.7 kPa (20°C)

Relative Vapor Density (Air=1): 3.42

Relative density of the Vapor/air-mixture at 20°C (Air = 1): 1.2

Specific gravity/Density: 1.251~1.261 g/ml(20°C)

Viscosity: 0.829mPas(20°C)

Solubility

- Solubility in water: 8.6g/liter(20°C)
- Solubility in solvent: Miscible with ethanol and diethyl ether.
- n-Octanol /water partition coefficient: log Pow1.48

10. Stability and Reactivity**Reactivity**

- Runaway polymerization will not occur.

Chemical stability

- Stable under normal storage/handling conditions.
- Turns dark on exposure to air, moisture and light.
- Highly flammable.

Possibility of hazardous reactions

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

As a result of flow, agitation, etc., electrostatic charges can be generated.

Reacts with alkali metals, powdered metals, ammonia, bases and strong oxidants. This generates fire and explosion hazard.

Attacks many metals in the presence of water

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat. Sparks. Air. Moisture. Light.

Incompatible materials

Bases, Strong oxidizing agents, Alkali metals, Powdered metals, Ammonia.

Hazardous decomposition products

Carbon oxides, Hydrogen chloride, Phosgene

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

[GHS Cat. Japan, base data]

rat LD50=670 mg/kg (EPA_J assessment vol.2, 2003)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

rabbit LD50=2800~4900 mg/kg (EHC 176, 1995)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

vapor : rat LC50=1000 ppm/4hr (IARC 20, 1979)

Labor standard law, Japan; Toxic

1,2-Dichloroethane

Irritant properties**Skin corrosion/irritation**

[GHS Cat. Japan, base data]

rabbit : slight irritation (SIDS, 2004; NITE hazard assessment, 2005)

Serious eye damage /irritation

[GHS Cat. Japan, base data]

rabbit : mild irritation (NITE hazard assessment, 2005)

No Allergenic and sensitizing effects data available**Germ cell mutagenicity**

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

(MHLW_Japan; Mutagenicity Test Results for Chemical Substances)

Carcinogenicity

[GHS Cat. Japan, base data]

cat. 1B; Carc. 1B(ECHA SVHC Support Document,2011) et al.

IARC-Gr.2B : Possibly carcinogenic to humans

ACGIH-A4(1977) : Not Classifiable as a Human Carcinogen

JSOH-2B: Insufficient Evidence of Carcinogenicity for Humans

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

EPA-Group B2; Probable Human Carcinogen(1986)

NTP-Reasonably Anticipated To Be Human Carcinogen

No reproductive toxicity data available**Delayed and immediate effects and also chronic effects from short- and long-term exposure****STOT**

STOT-single exposure

[cat.1]

1,2-Dichloroethane, JUNSEI CHEMICAL CO., LTD., 34090jis_E-2,24/05/2017

[Japan published data]

CNS; respiratory apparatus/system; CVS; blood/blood system; liver; kidney; digestive apparatus/alimentary system (PATTY 6th, 2012)

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

[Japan published data]

Narcosis (PATTY 6th, 2012)

STOT-repeated exposure

[cat.1]

[Japan published data]

nerve/nervous system; liver; CVS; thyroid/thyroid gland (NITE risk primary assessment, 2005)

[cat.2]

[Japan published data]

blood/blood system; kidney (NITE risk primary assessment, 2005)

No Aspiration hazard data available

12. Ecological Information

Toxicity

Aquatic toxicity

Harmful to aquatic life

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

Crustacea (Brine shrimp) LC50=12.8mg/L/24hr (EPA_Japan vol.2, 2003)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]

Algae (Pseudokirchneriella subcapitata) NOEC(r) = 55 mg/L/72hr (EPA_Japan, 1995)

Water solubility

8.6g/L (20°C)(PhysProp Database)

Persistence and degradability

Not degrade rapidly [BOD_Degradation : 0%/14 days; TOC_Degradation: 1.6%/14 days;

GC_Degradation: 1.1%/14 days (MITI official bulletin)]

Bioaccumulative potential

log Pow=1.48 (ICSC, 2013)

13. Disposal considerations

Waste treatment methods

Avoid release to the environment (- if this is not the intended use).

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

14. Transport Information

UN No, UN CLASS

UN number: 1184

UN proper shipping name: ETHYLENE DICHLORIDE

Transport hazard class(es): 3

Transport subsidiary risks: 6.1

Packing group: II

ERG GUIDE NO.: 131

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Y...1,2-Dichloroethane

15. Regulatory Information

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

TSCA

1,2-Dichloroethane

Other regulatory information

We are not able to check up the regulatory information in 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.

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. 3: H331 Toxic if inhaled

Eye Irrit. 2B: H320 Causes eye irritation

Carc. 1B: H350 May cause cancer

STOT SE 1: H370 Causes damage to organs(central nervous system, respiratory system, cardiovascular system, blood system, liver, kidney, gastrointestinal tract) after single exposure

STOT SE 3: H336 May cause drowsiness or dizziness

STOT RE 1: H372 Causes damage to organs (nervous system, liver, cardiovascular system, thyroid) through prolonged or repeated exposure

STOT RE 2: H373 May cause damage to organs (blood system, kidney) through prolonged or repeated exposure

Aquatic Acute 3: H402 Harmful to aquatic life

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN

Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)

2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT)

2017 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

Chemical Risk Information Platform (CHRIP)(NITE) <http://www.safe.nite.go.jp/japan/db.html>

GHS Classification Guidance for Enterprises 2013 Revised Edition (August, 2013, METI)

General Disclaimer

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own tests to determinate the safety and suitability of each such product or combination for their own purposes.

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 2015).