Date of issue for the 1st edition : 13/03/2014
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Safety Data Sheet

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

Product identifier:
Product name: Dichloromethane
Reference number(SDS):34355jis_E1-3
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 (Inhalation): Category 4
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2A
Carcinogenicity: Category 1A
Reproductive toxicity: Category 2
Specific target organ toxicity - single exposure: Category 1(central nervous system, respiratory organs)
Specific target organ toxicity - single exposure: Category 3(Narcosis)
Specific target organ toxicity - repeated exposure: Category 1(central nervous system, liver, genetic organs (men))
ENVIRONMENT HAZARDS
Hazardous to the aquatic environment (Acute): Category 3
Hazardous to the aquatic environment (Long-term): Category 3
Label elements

Signal word: Danger
HAZARD STATEMENT
H332-Harmful if inhaled
H315-Causes skin irritation
H319-Causes serious eye irritation
H350-May cause cancer
H361-Suspected of damaging fertility or the unborn child
H370-Causes damage to organs after single exposure
H336-May cause drowsiness or dizziness
H372-Causes damage to organs through prolonged or repeated exposure
H402-Harmful to aquatic life
H412-Harmful 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.
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.
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 or doctor/physician if you feel unwell.
IF exposed or concerned: Call a POISON CENTER or 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 skin irritation occurs: Get medical advice/attention.
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.
If eye irritation persists: Get medical advice/attention.

Storage

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

Ingredient name:Dichloromethane
Content (%):99.0<
Chemical formula:CH_2Cl_2
Chemicals No, Japan:2-36
CAS No.:75-09-2
MW:84.93
ECNO:200-838-9

Stabilizing additives

GR, EP, SPS : Amylene (0.001～0.004%)

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.
Keep victim warm and quiet.
Call emergency medical service.

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 or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Remove and isolate contaminated clothing and shoes.
For minor skin contact, avoid spreading material on unaffected skin.

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.
Administration of oxygen may be needed.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Nausea. Abdominal pain. Headache. Drowsiness. Dizziness. Weakness. Unconsciousness.

(Symptoms when skin and/or eye contact)

Dry skin. Conjunctival redness of the eyes. Redness of the skin. Pain of the eyes.
Burning sensation of the skin.
※May be absorbed into the skin.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

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.
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 peace 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 SAFTY: Ventilate closed spaces before entering.

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.

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).

PUBLIC SAFETY : Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).

Keep out of low 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/sparks/open flames/hot surfaces. - 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.

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.

Fire or Explosion : Most vapors are heavier than air.

Any incompatibilities

Strong bases, Strong oxidizing agents, Metal powder 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.

Take off 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 (2004) <= 50ppm
Adopted value
JSOH(1999) 50ppm; 170mg/m3; (ceiling) 100ppm; 340mg/m3 (dermal)
ACGIH(1997) TWA: 50ppm (COHb-emia; CNS impair)
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): viton, 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.
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: Volatile liquid
Color: Colorless
Odor: Characteristic odor
Odor threshold: 205～307ppm; 540～2160 mg/m3
Melting point/Freezing point: -95.1℃
Boiling point or initial boiling point: 40℃
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: 13vol %
Upper explosion limit: 23vol %
Flash point data is not available.
Auto-ignition temperature: 605℃
Decomposition temperature: >120℃
Self-Accelerating Decomposition Temperature/SADT data is not available.
pH data is not available.
Dynamic viscosity: 0.43mPas(20℃)
Kinematic viscosity: 0.3mm2/s(20℃)
Solubility:
Solubility in water: 1.3 g/100 ml (20℃)
Solubility in solvent: Very soluble in ethanol and diethyl ether.
n-Octanol/water partition coefficient: log Pow1.25
Vapor pressure: 47.4 kPa （20℃）

Vapor density data is not available.
VOC data is not available.
Evaporation rate data is not available.
Density and/or relative density: 1.33g/cm3(20℃)
Relative vapor density (Air=1): 2.9
Relative density of the Vapor/air - mixture at 20℃ (Air = 1): 1.9
Critical temperature data is not available.
No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.
Flammable under specific conditions.
※Do NOT use in the vicinity of a fire or a hot surface, or during welding.

Possibility of hazardous reactions

The vapour is heavier than air. As a result of flow, agitation, etc., electrostatic charges can be generated.
Decomposes on heating or on burning and on contact with hot surfaces. This produces toxic and corrosive fumes.
Reacts violently with strong oxidants, strong bases and metals such as aluminium powder and magnesium powder. This generates fire and explosion hazard.
Attacks some forms of plastic (e.g. Polyvinyl chloride, Polystyrene), rubber (e.g. Natural rubber, Nitrile rubber, Butyl rubber) and coatings.

Conditions to avoid

Contact with incompatible materials.
Open flames. Heat. Sparks. Light.

Incompatible materials

Strong bases, Strong oxidizing agents, Metal powder.

Hazardous decomposition products

Carbon oxides, Chlorine, Hydrogen chloride. Phosgene.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]
rat(male) LD50=2120mg/kg, 2280mg/kg(EHC 164, 1996; NITE Primary risk assessment, 2005)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]
vapor：rat LC50=18371ppm/4hr(male, cal.) (EHC 164, 1996; NITE primary risk assessment, 2005);
＜90% of saturated vapor press. conc. (574109ppm (25℃))

Labor standard law, Japan; Toxic

Dichloromethane

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]
rabbit : severe or moderate irritation (DFGOT vol. 1, 2016, Access on May 2017;
NITE primary risk assessment, 2005)

Serious eye damage/irritation

[GHS Cat. Japan, base data]
rabbit : mild to moderate inflammation, moderate irritation (all DFGOT vol. 1, 2016, Access on May 2017)

Allergenic and sensitizing effects data is not available.

Germ cell mutagenicity

Mutagen [MOHL_J Notice]

(Dichloromethane)

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

(gas, MHLW in Japan_Mutagenicity Test Results for Chemical Substances)

Carcinogenicity

[GHS Cat. Japan, base data]

cat.1A; IARC Gr.2A (IARC 110, 2016); NTP R (NTP RoC, 14th, 2016); EPA L (IRIS, 2011)

IARC-Gr.2A : Probably carcinogenic to humans

ACGIH-A3(1997) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

EPA-L; "Likely to Be Carcinogenic to Humans"(2005)

NTP-Reasonably Anticipated To Be Human Carcinogen

JSOH-2A: Sufficient Evidence of Carcinogenicity for Humans

EU-Category 2; Substances suspected human carcinogens

Labor standard law, Japan : Carcinogen

Dichloromethane

Reproductive toxicity

[GHS Cat. Japan, base data]

cat. 2; human JSOH, 2005; SIAP, 2011; NITE primary risk assessment, 2005; DFGOT vol. 1, 2016, Access on May 2017; ACGIH 7th, 2015; MOE risk assessment, vol.3, 2004

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

central nervous system; respiratory organs (NITE primary risk assessment, 2005; EHC 164, 1996)

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

[GHS Cat. Japan, base data]

narcotic effect (NITE primary risk assessment, 2005; EHC 164, 1996)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

central nervous system; liver; male genitalia (NITE primary risk assessment, 2005; EHC 164, 1996; MOE risk assessment vol.3, 2004; JSOH, 1999)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H402-Harmful 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=27mg/L/48hr (Canada PSAR, 1993; OECD SIDS, 2011)

Water solubility

1.3 g/100 ml (20℃) (ICSC, 2017)

Persistence and degradability

Not degrade rapidly [BOD Degradation(avg.):13% (J-CHECK, 1986)]

Bioaccumulative potential

log Pow=1.25 (ICSC, 2017); BCF=40 (Registered chemicals data check & review, Japan)

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 (- 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 No. or ID No.: 1593

UN Proper Shipping Name : DICHLOROMETHANE

Class or division (Transport hazard class) : 6.1

Packing group : III

ERG GUIDE No.: 160

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1593

Proper Shipping Name : DICHLOROMETHANE

Class or division : 6.1

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 1593

Proper Shipping Name : DICHLOROMETHANE

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

Carcinogenicity: cat.1, 1A, 1B

Dichloromethane

Specific target organ toxicity - repeated exposure: cat.1

Dichloromethane

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

Dichloromethane(Y-233)

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Dichloromethane

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

H332-Acute Tox. 4: H332 Harmful if inhaled
H315-Skin Irrit. 2: H315 Causes skin irritation
H319-Eye Irrit. 2A: H319 Causes serious eye irritation
H350-Carc. 1A: H350 May cause cancer
H361-Repr. 2: H361 Suspected of damaging fertility or the unborn child
H370-STOT SE 1: H370 Causes damage to organs after single exposure
H336-STOT SE 3: H336 May cause drowsiness or dizziness
H372-STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure
H402-Aquatic Acute 3: H402 Harmful 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)
2020 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019
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-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 2019).