



Safety Data Sheet

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

Product identifier:

Product name: Divinylbenzene(m,p-mix.)

SDS No. : 2645E-3

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

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

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 4

Self-reactive substances and mixtures: Type G

HEALTH HAZARDS

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 2

Skin sensitization: Category 1

Germ cell mutagenicity: Category 2

Reproductive toxicity: Category 2

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 2 (thymus, liver, kidneys)

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

Combustible liquid

Causes severe skin burns and eye damage

May cause an allergic skin reaction

Suspected of causing genetic defects

Suspected of damaging fertility or the unborn child

May cause respiratory irritation

May cause drowsiness or dizziness

May cause damage to organs through prolonged or repeated exposure (thymus, liver, kidneys)

Toxic 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.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- 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.

Response

- In case of fire: Use appropriate media to extinguish.
- Collect spillage.
- Get medical advice/attention if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- 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 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. Do NOT induce vomiting.

Storage

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

Disposal

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

Specific Physical and Chemical hazards

- Heating may cause fire.

Section 3. Composition/information on ingredients**Mixture/Substance selection:****Mixture**

Ingredient name:Divinylbenzene(m,p-mix.)

Content (%):55-60

Chemical formula:C10H10

Chemicals No, Japan:3-14

CAS No.:1321-74-0

MW:130.19

ECNO:215-325-5

Ingredient name:Ethylvinylbenzene

Content (%):35-40

Chemical formula:C10H12

Chemicals No, Japan:3-8

CAS No.:28106-30-1

MW:396.62

ECNO:248-846-1

Ingredient name:Diethylbenzene

Content (%):3.0



Chemical formula:C10H14

Chemicals No, Japan:3-13; 3-60

CAS No.:25340-17-4

MW:134.2

ECNO:246-874-9

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

Stabilizing additives

4-tert-Butylcatechol(p-) 0.10% (CAS No.98-29-3)

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

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 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/doctor/physician if you feel unwell.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – other (except for phosphate etc.,hydrogen carbonate etc.)

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – other (except for phosphate etc.,hydrogen carbonate etc.)

Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.

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

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.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

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.

Section 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

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

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

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Chilled storage.

Container and packaging materials for safe handling

Glass

Stainless steel

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(Divinylbenzene(m,p-mix.))

ACGIH(1990) TWA: 10ppm (URT irr)

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.

Eye protection

Wear eye/face protection.

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

Physical state: Liquid

Color: Colorless to pale yellow, Clear

Odor: Characteristic odor

Melting point/Freezing point: -45°C

Boiling point or initial boiling point data is not available.

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: 65°C

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 0.9

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

Section 10. Stability and Reactivity**Reactivity**

Not available.

Chemical stability

May discolor and polymerize due to temporal change.

Possibility of hazardous reactions

(Divinylbenzene(m,p-mix.))

The substance may polymerize due to heating. This generates fire or explosion hazard.

Reacts violently with oxidants. (ICSC 0885)

(Diethylbenzene)

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

Decomposes on burning. This produces toxic and corrosive fumes including carbon monoxide and formaldehyde. Reacts with oxidants. (ICSC 0445)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials



Oxidizing agents
Hazardous decomposition products
Carbon oxides, Formaldehyde

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
rat LD50=2155mg/kg (ACGIH, 2001)
(4-tert-Butylcatechol(p-))
rat LD50=2820mg/kg (NTP TOX-70, 2002)

Acute toxicity (Dermal)

[Data for components of the product]
[GHS Cat. Japan, base data]
(4-tert-Butylcatechol(p-))
rabbit LD50=630mg/kg (NTP TOX-70, 2002)

Irritant properties

Skin corrosion/irritation

[Data for components of the product]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
human necrosis et al (ACGIH, 2001)

Serious eye damage/irritation

[Data for components of the product]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
rabbit (ACGIH, 2001)

Sensitization

Skin sensitization

[Data for components of the product]
[GHS Cat. Japan, base data]
(4-tert-Butylcatechol(p-))
cat. 1A; mouse/positive (OECD TG 429, GLP) (AICIS IMAP, 2018)

Germ cell mutagenicity

[Data for components of the product]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
cat. 2; in vivo (MN, CAs, SCEs) positive

Carcinogenicity

[Data for components of the product]
[GHS Cat. Japan, base data]
(4-tert-Butylcatechol(p-))
cat.2; (MHLW carcinogenicity examination, 2016)

Reproductive toxicity

[Data for components of the product]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
cat. 2; JECDB, 2006

Specific target organ toxicity (STOT)

STOT-single exposure



[Data for components of the product]
[cat.3 (respiratory tract irritation)]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
respiratory tract irritation (ACGIH, 2001)
[cat.3 (narcotic effects)]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
narcotic effect (ACGIH, 2001)

STOT-repeated exposure

[Data for components of the product]
[cat.2]
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
thymus, liver, kidneys (ACGIH, 2001)

Aspiration hazard data is not available.

Section 12. Ecological Information**Toxicity****Aquatic toxicity**

[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
Algae (*Pseudokirchneriella subcapitata*) ErC50=1.83mg/L/72hr (MOE Japan, 2009)
Hazardous to the aquatic environment, long-term (chronic)
[GHS Cat. Japan, base data]
(Divinylbenzene(m,p-mix.))
Crustacea (*Daphnia magna*) NOEC=0.353mg/L/21days (MOE Japan, 2009)

Water solubility

(Divinylbenzene(m,p-mix.))
none (ICSC, 1997)
(Diethylbenzene)
none (ICSC, 2010)

Persistence and degradability

[Data for components of the product]
(Divinylbenzene(m,p-mix.))
Not rapidly degradable (BOD_Degradation : 0% (METI existing chemical safety inspections, 1988))

Bioaccumulative potential

[Data for components of the product]
(Divinylbenzene(m,p-mix.))
log Pow=3.59 (estimated) (ICSC, 1997); BCF=433(m-), 402(p-) (Check & Review, Japan)
(Diethylbenzene)
log Pow=4-4.6 (estimated) (ICSC, 2010)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.



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.

Section 14. Transport Information

UN Number or ID Number : 1760

UN Proper Shipping Name :

CORROSIVE LIQUID, N.O.S.

Class or division (Transport hazard class) : 8

Packing group : I

ERG GUIDE No.: 154

Special provisions No.: 274

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1760

UN Proper Shipping Name :

CORROSIVE LIQUID, N.O.S.

Class or division (Transport hazard class) : 8

Packing group : I

Special provisions No.: 274

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1760

UN Proper Shipping Name :

CORROSIVE LIQUID, N.O.S.

Class or division (Transport hazard class) : 8

Hazard labels : Corrosive

Packing group : I

Special provisions No.: A3; A803

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

Diethylbenzene

Section 15. Regulatory Information

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

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

Chemicals listed in TSCA Inventory

4-tert-Butylcatechol(p-); Divinylbenzene(m,p-mix.); Diethylbenzene; Ethylvinylbenzene

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Section 16. Other information

GHS classification and labelling

Flammable liquids, Category 4: H227 Combustible liquid

Self-Reactive Substances and Mixtures, Type G

Skin corrosion/irritation, Category 1: H314 Causes severe skin burns and eye damage



Serious eye damage/eye irritation, Category 2: H319 Causes serious eye irritation
Skin sensitization, Category 1: H317 May cause an allergic skin reaction
Germ cell mutagenicity, Category 2: H341 Suspected of causing genetic defects
Reproductive toxicity, Category 2: H361 Suspected of damaging fertility or the unborn child
STOT – single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.
STOT – single exposure, Category 3, Narcotic effects: H336 May cause drowsiness or dizziness.
STOT – Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure
Hazardous to the aquatic environment, short-term (acute), Category 2: H401 Toxic to aquatic life
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 21th edit., 2019 UN
IMDG Code, 2020 Edition (Incorporating Amendment 40-20)
IATA Dangerous Goods Regulations (62nd Edition) 2021
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2022 TLVs and BEIs. (ACGIH)
Supplier's data/information

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 2021).