

Chemical Safety Data Sheet MSDS / SDS

1,2-divinylbenzeneRevision Date:2023-05-06 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name : 1,2-divinylbenzene
CBnumber : CB8937111
CAS : 91-14-5
EINECS Number : 202-043-2
Synonyms : ortho-divinylbenzene

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 400-158-6606

SECTION 2: Hazards identification**Classification of the substance or mixture**

no data available

Label elements**Pictogram(s)**

Signal word : no data available

Hazard statement(s)

no data available

Precautionary statement(s)**Prevention**

no data available

Response

no data available

Storage

no data available

Disposal

no data available

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: 1,2-divinylbenzene
Synonyms	: ortho-divinylbenzene
CAS	: 91-14-5
EC number	: 202-043-2
MF	: C ₁₀ H ₁₀
MW	: 130.19

SECTION 4: First aid measures

Description of first aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Rest.

Most important symptoms and effects, both acute and delayed

Exposure Routes: inhalation, ingestion, skin and/or eye contact Symptoms: irritation eyes, skin, respiratory system; skin burns; in animals: central nervous system depressant/depression Target Organs: Eyes, skin, respiratory system, central nervous system (NIOSH, 2016)

Indication of any immediate medical attention and special treatment needed

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Aromatic hydrocarbons and related compounds

SECTION 5: Firefighting measures

Extinguishing media

Use water spray, dry chemical, foam, or carbon dioxide. Use water spray to keep fire-exposed containers cool. Fight fire from protected equipment or maximum possible distance. Use remote equipment wherever possible.

Specific Hazards Arising from the Chemical

This chemical is combustible. (NTP, 1992)

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Stop or control the leak, if this can be done without undue risk. Adsorb in noncombustible material (e.g., sand) for proper disposal. Use water spray to cool and disperse vapors and protect personnel. Control runoff and isolate discharged material for proper disposal.

SECTION 7: Handling and storage

Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Separated from oxidants. Cool. Store only if stabilized. Store in a cool, dry, well-ventilated location. Outside or detached storage is preferred.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	1,2-divinylbenzene	
CAS No.	91-14-5	
	Limit value - Eight hours	Limit value - Short term

	ppm	mg/m ³	ppm	mg/m ³
Denmark	10	50	20	100
	Remarks			

Biological limit values

no data available

Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Physical state	Divinyl benzene is a water-white to straw colored liquid. Slightly less dense than water and insoluble in water. Vapors may be toxic. Used in making rubber.
Colour	Pale, straw-colored liquid.
Odour	no data available
Melting point/freezing point	-125° F (NTP, 1992)
Boiling point or initial boiling point and boiling range	207.3°C at 760 mmHg
Flammability	Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.
Lower and upper explosion limit/flammability limit	Lower flammable limit: 0.7% by volume; Upper flammable limit: 6.2% by volume
Flash point	71.9°C
Auto-ignition temperature	500 deg C
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	less than 1 mg/mL at 64° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 3.8 /Estimated/
Vapour pressure	0.7 mm Hg (NIOSH, 2016)

Density and/or relative density	0.921g/cm ³
Relative vapour density	(air = 1): 4.48
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

The substance may polymerize due to heating. This generates fire or explosion hazard. Reacts violently with oxidants.

Chemical stability

no data available

Possibility of hazardous reactions

Combustible. Heating will cause rise in pressure with risk of bursting. DIVINYLBENZENE may react vigorously with strong oxidizing agents. Can react exothermically with reducing agents (such as alkali metals and hydrides) to release gaseous hydrogen. May react exothermically with both acids and bases. May in the presence of various catalysts (such as acids) or initiators undergo exothermic polymerization. Inhibited by presence of an additive. When uninhibited violent polymerization may occur (NTP, 1992). Substitution at the benzene nucleus occurs by halogenation (acid catalyst), nitration, sulfonation, and the Friedel-Crafts reaction.

Conditions to avoid

no data available

Incompatible materials

Reacts with acids, oxidizing materials, peroxides, metal salts such as iron chloride or aluminum chloride, or polymer initiators.

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat (male) oral 4640 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

In a 4-week biodegradation screening test (MITI test) using vinylstyrene (100 mg/l) and an activated sludge inoculum (30 mg/l), 0% of BOD was removed(1). Data regarding the biodegradation of vinylstyrene in either soil or aquatic systems were not available(SRC).

Bioaccumulative potential

A BCF range of 206-444 was measured for vinylstyrene(1). According to a classification scheme(2), these BCF values suggest the potential for bioconcentration in aquatic organisms is high(SRC).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for vinylstyrene can be estimated to be 1,700(SRC). According to a classification scheme(2), this estimated Koc value suggests that vinylstyrene is expected to have low mobility in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: no data available

IMDG: no data available

IATA: no data available

UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

Transport hazard class(es)

ADR/RID: no data available

IMDG: no data available

IATA: no data available

Packing group, if applicable

ADR/RID: no data available

IMDG: no data available

IATA: no data available

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Not Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

PICCS

Not Listed.

Vietnam National Chemical Inventory

Not Listed.

IECSC

Not Listed.

Korea Existing Chemicals List (KECL)

Not Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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