

4-Vinylcyclohexene diepoxide (VCD) SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- * Product Name: 4-Vinylcyclohexene diepoxide (VCD)
- * Catalog Number: E0024
- * CAS Number: 106-87-6
- * IUPAC Name: 7-Oxabicyclo[4.1.0]heptane, 3-(2-oxiranyl)-

Relevant identified uses and uses advised against

- * Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
- * Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- * Company: Selleck Chemicals
- * TollFree: +1 877 796-6397
- * Tel: +1 832 582-8158
- * Fax: +1 832 582-8590

Emergency telephone number

- * Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

- Acute toxicity (oral): Category 3. H301
- Acute toxicity (oral): Category 4. H302
- Acute toxicity (oral): Category 5. H303
- Acute toxicity (dermal): Category 3. H311
- Skin irritation: Category 2. H315
- Serious eye irritation: Category 2. H319
- Acute toxicity (inhalation): Category 3. H331
- Acute toxicity (inhalation): Category 4. H332
- Specific target organ toxicity (single exposure): Category 3. H335
- Specific target organ toxicity (single exposure): Category 3. H336
- Germ cell mutagenicity: Category 2. H341
- Carcinogenicity: Category 1. H350
- Carcinogenicity: Category 2. H351
- Reproductive toxicity: Category 1. H360
- Not classified. H360F
- Reproductive toxicity: Category 2. H361
- Specific target organ toxicity (repeated exposure): Category 2. H373
- Acute aquatic toxicity: Category 3. H402

Chronic aquatic toxicity: Category 3. H412

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Danger

Hazard statement(s)

H301: Toxic if swallowed
H302: Harmful if swallowed
H303: May be harmful if swallowed
H311: Toxic in contact with skin
H315: Causes skin irritation
H319: Causes serious eye irritation
H331: Toxic if inhaled
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
H341: Suspected of causing genetic defects
H350: May cause cancer
H351: Suspected of causing cancer
H360: May damage fertility or the unborn child
H360F: May damage fertility
H361: Suspected of damaging fertility or the unborn child
H373: May 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(s)

None.

Prevention

P203: Obtain, read and follow all safety instructions before use.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash hands thoroughly after handling.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response	P301+P316: IF SWALLOWED: Get emergency medical help immediately. P301+P317: IF SWALLOWED: Get medical help. P302+P352: IF ON SKIN: wash with plenty of water. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351: IF IN EYES: Rinse cautiously with water for several minutes. P316: Get emergency medical help immediately. P317: Get emergency medical help. P318: if exposed or concerned, get medical advice. P319: Get medical help if you feel unwell. P321: Specific treatment (see information on this label and safety datasheet)). P330: Rinse mouth. P332+P317: If skin irritation occurs: Get medical help. P337+P317: If eye irritation persists: Get medical help. P338: Remove contact lenses, if present and easy to do. Continue rinsing. P361+P364: Take off immediately all contaminated clothing and wash it before reuse. P362+P364: Take off contaminated clothing and wash it before reuse.
Storage	P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.
Disposal	P501: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: 4-Vinylcyclohexene diepoxide (VCD)

CAS Number: 106-87-6

PubChem CID: 7833

Molecular formula: C₈H₁₂O₂

Molecular weight: 140.18 g/mol

IUPAC name: 3-(oxiran-2-yl)-7-oxabicyclo[4.1.0]heptane

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Skin contact: Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

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

Ingestion: Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. A water spray may also be used. (NTP, 1992)

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

To fight fire: Water, foam, dry chemical.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

Flash point: 230 °F (NTP, 1992)

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

WARNING: Highly toxic — only trained personnel should handle spills.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]:

IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Wash away remainder with plenty of water.

The worker should immediately wash the skin when it becomes contaminated.

Work clothing that becomes wet or significantly contaminated should be removed and replaced.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

SMALL SPILLS AND LEAKAGE: If you should spill this chemical, use absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as any of your clothing which may be contaminated, in a vapor-tight plastic bag for eventual disposal. Wash any surfaces you may have contaminated with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

STORAGE PRECAUTIONS: You should store this chemical under refrigerated temperatures, and protect it from moisture. (NTP, 1992)

Separated from food and feedstuffs, alcohols, amines and other active hydrogen compounds. Dry. Ventilation along the floor.

7.2 Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs, alcohols, amines and other active hydrogen compounds. Dry. Ventilation along the floor.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

Store in original container. Keep upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

skin absorption (H); carcinogen category: 2

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Wear NIOSH-approved respirator with appropriate cartridges. SCBA for high concentrations.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: 1-vinyl-3-cyclohexene dioxide is a clear colorless liquid. Sets to glass at -67 °F. Faint olefinic odor. (NTP, 1992)

- b) Odor: No data available
- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: less than -67 °F (NTP, 1992)
- f) Initial boiling point and boiling range: 441 °F at 760 mmHg (NTP, 1992)
- g) Flash point: 230 °F (NTP, 1992)
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: 0.1 mmHg at 68 °F (NTP, 1992)
- l) Vapor density: No data available
- m) Relative density: 1.0986 at 68 °F (NTP, 1992) - Denser than water; will sink
- n) Water solubility: 50 to 100 mg/mL at 72 °F (NTP, 1992)
- o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): 0.8
- p) Auto-ignition temperature: 393 °C
- q) Decomposition temperature: No data available
- r) Viscosity: 7.77 CP @ 20 °C
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 Other information

Topological Polar Surface Area (TPSA): 25.1 Å²
Complexity: 157

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

10.5 Incompatible materials

Alcohols, amines, water [Note: Slowly hydrolyzes in water].
Alcohols, amines, water [Note: Slowly hydrolyzes in water.]

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO₂).
See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

Causes skin irritation (H315).

Serious eye damage/eye irritation:

Causes serious eye irritation (H319).

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

Suspected of causing genetic defects (H341).

Carcinogenicity:

May cause cancer (H350).

Reproductive toxicity:

May damage fertility or the unborn child (H360).

Specific target organ toxicity (single exposure):

H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

4-Vinylcyclohexene diepoxide

Group 2B: Possibly carcinogenic to humans

Volume Sup 7: Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs Volumes 1 to 42, 1987; 440 pages; ISBN 92-832-1411-0 (out of print)

Volume 60: (1994) Some Industrial Chemicals

1994

1994

4-Vinyl-1-Cyclohexene Diepoxide

TR-362: Toxicology and Carcinogenesis Studies of 4-Vinyl-1-cyclohexene Diepoxide (CASRN 106-87-6) in F344/N Rats and B6C3F1 Mice (Dermal Studies) (1989)

03/13/89

Clear Evidence

Clear Evide

Exposure routes:

The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

inhalation, skin absorption, ingestion, skin and/or eye contact

Signs and symptoms of exposure:

Cough. Laboured breathing. Sore throat.

MAY BE ABSORBED! Dry skin. Redness. Pain. Swelling.

Redness. Pain.

See Inhalation.

In Animals: irritation eyes, skin, respiratory system; testicular atrophy; leukopenia (reduced blood leukocytes), necrosis thymus; skin sensitization; [potential occupational carcinogen]

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No ecotoxicity data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): 0.8

Low potential for bioaccumulation (Log P < 3).

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

This substance is classified as hazardous to the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Class 6.1

DOT label: Poison

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

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

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Not available in public databases.

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Environmental hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: 7-Oxabicyclo[4.1.0]heptane, 3-oxiranyl-
- California Safe Cosmetics Program (CSCP) Reportable Ingredient: Hazard Traits - Carcinogenicity; Reproductive Toxicity Authoritative List - EC Annex VI CMRs - Cat. 1B; IARC Carcinogens - 2B; NTP RoC - reasonable; Prop 65 Report - regardless of intended function of
- New Jersey Worker and Community Right to Know Act: The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces.

(N.J.S.A. 34:5A-1 et. seq.)

- TSCA Requirements: Section 8(a) of TSCA requires manufacturers of this chemical substance to report preliminary assessment information concerned with production, use, and exposure to EPA as cited in the preamble of the 51 FR 41329.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/08

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.