

SAFETY DATA SHEET

Version 6.12
Revision Date 08/21/2025
Print Date 08/22/2025

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : 1,8-Diazabicyclo[5.4.0]undec-7-ene
Product Number : 33482
Brand : Sigma-Aldrich
CAS-No. : 6674-22-2

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

Identified uses : Laboratory chemicals, Synthesis of substances
Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES
Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 3
Skin corrosion : Sub-category 1B

Serious eye damage : Category 1

Short-term (acute) aquatic hazard : Category 3

Other hazards

None known.

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H402 Harmful to aquatic life.

Supplemental Hazard Statements : Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing, eye protection and face protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Components

| Chemical name | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|------------------------------------|-------------------|-----------------------|--------------|
| 1,8-diazabicyclo[5.4.0]undec-7-ene | 6674-22-2* | >= 80 - <= 100 | TSC |

* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance.

If inhaled : After inhalation: fresh air. Call in physician.

In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact : After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed : If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

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SECTION 5. FIREFIGHTING MEASURES

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| Suitable extinguishing media | : Water Foam Carbon dioxide (CO ₂) Dry powder |
| Unsuitable extinguishing media | : For this substance/mixture no limitations of extinguishing agents are given. |
| Specific hazards during fire fighting | : Combustible. Vapours are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. |
| | Development of hazardous combustion gases or vapours possible in the event of fire. |
| Hazardous combustion products | : Carbon oxides Nitrogen oxides (NO _x) |
| Specific extinguishing methods | : No data available |
| Further information | : Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system. |
| Special protective equipment for fire-fighters | : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions, protective equipment and emergency procedures | : Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8. |
| Environmental precautions | : Do not let product enter drains. |
| Methods and materials for containment and cleaning up | : Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area. |

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

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| Further information on storage conditions | : Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons. |
| Storage class | : 6.1A, Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials |
| Recommended storage temperature | : Recommended storage temperature see product label. |
| Further information on storage stability | : Sensitive to carbon dioxide Air sensitive. |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : No data available

Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying

standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

Material : butyl-rubber
Break through time : 480 min
Glove thickness : 0.7 mm
Protective index : Full contact
Manufacturer : Butoject® (KCL 898)

Material : Nitrile rubber
Break through time : 240 min
Glove thickness : 0.4 mm
Protective index : Splash contact
Manufacturer : Camatril® (KCL 730 / Aldrich Z677442, Size M)

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Eye protection

: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Tightly fitting safety goggles

Skin and body protection : protective clothing

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : clear, liquid

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|---|---|
| Color | : yellow |
| Odor | : unpleasant |
| Odor Threshold | : No data available |
| pH | : 12.8 (68 °F / 20 °C) Concentration: 10 g/l |
| Melting point/ range | : -94 °F / -70 °C |
| Boiling point/boiling range | : 239 °F / 115 °C (15 hPa) Method: lit. |
| Flash point | : 241 °F / 116 °C |
| Evaporation rate | : No data available |
| Flammability (solid, gas) | : No data available |
| Flammability (liquids) | : No data available |
| Burning rate | : No data available |
| Upper explosion limit / Upper flammability limit | : 6.5 %(V) (304 °F / 151 °C) |
| Lower explosion limit / Lower flammability limit | : 1.1 %(V) (223 °F / 106 °C) |
| Vapor pressure | : 7.1 hPa (99.9 °F / 37.7 °C) |
| Relative vapour density | : No data available |
| Relative density | : No data available |
| Density | : 1.019 g/mL (68 °F / 20 °C) Method: lit. |
| Water solubility | : No data available |
| Partition coefficient: n-octanol/water | : log Pow: < -2.2 |
| Autoignition temperature | : 500 °F / 260 °C |
| Decomposition temperature | : No data available |

| | |
|--------------------------|--------------------------------|
| Viscosity, dynamic | : No data available |
| Viscosity, kinematic | : No data available |
| Flow time | : No data available |
| Explosive properties | : Not classified as explosive. |
| Oxidizing properties | : No data available |
| Molecular weight | : 152.24 g/mol |
| Particle characteristics | |
| Particle size | : No data available |

SECTION 10. STABILITY AND REACTIVITY

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| Reactivity | : Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. |
| Chemical stability | : The product is chemically stable under standard ambient conditions (room temperature) . |
| Possibility of hazardous reactions | : Violent reactions possible with: acid halides Acid anhydrides Chloroform acids |
| Conditions to avoid | : Strong heating. |
| Incompatible materials | : Metals |
| Hazardous decomposition products | : In the event of fire: see section 5 |

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - > 215 - < 681 mg/kg
(OECD Test Guideline 401)

Remarks: (ECHA)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Remarks: (ECHA)

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****1,8-diazabicyclo[5.4.0]undec-7-ene:**

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 146.6 mg/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Method: DIN 38412
GLP: no
Remarks: (ECHA)

Toxicity to daphnia and : EC50 (Daphnia magna (Water flea)): 50 mg/l

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| other aquatic invertebrates | Exposure time: 48 h Test Type: static test Analytical monitoring: yes GLP: yes Remarks: (ECHA) |
| Toxicity to algae/aquatic plants | : EC10 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes GLP: yes Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : NOEC (Daphnia magna (Water flea)): >= 12 mg/l Exposure time: 21 d Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes Remarks: (ECHA) |

Persistence and degradability

Components:

1,8-diazabicyclo[5.4.0]undec-7-ene:

| | |
|------------------|---|
| Biodegradability | : aerobic Inoculum: activated sludge, non-adapted Concentration: 400 mg/l Result: Not readily eliminated from water. Biodegradation: 19 % Exposure time: 28 d Method: OECD Test Guideline 302B Remarks: (ECHA) |
|------------------|---|

Bioaccumulative potential

Components:

1,8-diazabicyclo[5.4.0]undec-7-ene:

| | |
|-----------------|--|
| Bioaccumulation | : Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): <= 0.4 Exposure time: 42 d Concentration: 0.5 mg/l Method: OECD Test Guideline 305C GLP: yes Remarks: Does not accumulate in organisms. |
|-----------------|--|

| | |
|--|-------------------|
| Partition coefficient: n-octanol/water | : log Pow: < -2.2 |
|--|-------------------|

Mobility in soil

Components:

1,8-diazabicyclo[5.4.0]undec-7-ene:

Stability in soil : Remarks: No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Components:

1,8-diazabicyclo[5.4.0]undec-7-ene:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

| | |
|--|---|
| UN/ID No. | : UN 2922 |
| Proper shipping name | : Corrosive liquid, toxic, n.o.s. (1,8-diazabicyclo[5.4.0]undec-7-ene) |
| Class | : 8 |
| Subsidiary risk | : 6.1 |
| Packing group | : II |
| Labels | : Class 8 - Corrosive substances, Division 6.1 - Toxic substances |
| Packing instruction (cargo aircraft) | : 855 |
| Packing instruction (passenger aircraft) | : 851 |

IMDG-Code

| | | |
|----------------------|---|---|
| UN number | : | UN 2922 |
| Proper shipping name | : | CORROSIVE LIQUID, TOXIC, N.O.S. (1,8-diazabicyclo[5.4.0]undec-7-ene) |
| Class | : | 8 |
| Subsidiary risk | : | 6.1 |
| Packing group | : | II |
| Labels | : | 8 (6.1) |
| EmS Code | : | F-A, S-B |
| Marine pollutant | : | no |

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations**49 CFR Road**

| | | |
|----------------------|---|--|
| UN/ID/NA number | : | UN 2922 |
| Proper shipping name | : | Corrosive liquids, toxic, n.o.s. (1,8-diazabicyclo[5.4.0]undec-7-ene) |
| Class | : | 8 |
| Subsidiary risk | : | 6.1 |
| Packing group | : | II |
| Labels | : | Class 8 - Corrosive substances, Division 6.1 - Toxic substances |
| ERG Code | : | 154 |
| Marine pollutant | : | no |

Poison Inhalation Hazard : No

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 313

: 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.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMi Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION**Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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