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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Bicyclo[2.2.1]hept-2-ene  
Product Number : N32407  
Brand : Aldrich  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # : (314) 776-6555

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**2. HAZARDS IDENTIFICATION****Emergency Overview****OSHA Hazards**

Flammable solid

**GHS Label elements, including precautionary statements**

Pictogram



Signal word : Danger

Hazard statement(s)

H228 : Flammable solid  
H401 : Toxic to aquatic life.

Precautionary statement(s)

P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

**HMIS Classification**Health hazard: 0  
Flammability: 2  
Physical hazards: 0**NFPA Rating**Health hazard: 0  
Fire: 2  
Reactivity Hazard: 0**Potential Health Effects**

**Inhalation** : May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** : May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** : May cause eye irritation.  
**Ingestion** : May be harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**Synonyms : 2-Norbornene  
NorbornyleneFormula : C<sub>7</sub>H<sub>10</sub>

Molecular Weight : 94.15 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>8,9,10-trinorborn-2-ene</b>			
498-66-8	207-866-0	-	-

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#### 4. FIRST AID MEASURES

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### In case of eye contact

Flush eyes with water as a precaution.

##### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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#### 5. FIRE-FIGHTING MEASURES

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

##### Further information

Use water spray to cool unopened containers.

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#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions

Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

##### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

##### Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

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#### 7. HANDLING AND STORAGE

##### Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

##### Conditions for safe storage

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin and body protection

Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	crystalline
Colour	colourless

### Safety data

pH	no data available
Melting point	44 - 46 °C (111 - 115 °F) - lit.
Boiling point	96 °C (205 °F) - lit.
Flash point	-14 °C (7 °F) - closed cup
Flammability (solid, gas)	The substance or mixture is a flammable solid with the subcategory 1.
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

### Materials to avoid

Strong oxidizing agents

## Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - rat - 11,300 mg/kg

LD50 Dermal - rabbit - > 5,000 mg/kg

### Skin corrosion/irritation

no data available

### 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.

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

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 identified as a carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

no data available

### Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

### Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

### Aspiration hazard

no data available

### Potential health effects

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

### Additional Information

RTECS: RB7900000

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## 12. ECOLOGICAL INFORMATION

### Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 10 mg/l - 96 h

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

no data available

**13. DISPOSAL CONSIDERATIONS****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

UN-Number: 1325 Class: 4.1 Packing group: II  
 Proper shipping name: Flammable solids, organic, n.o.s. (8,9,10-trinorborn-2-ene)  
 Marine pollutant: No  
 Poison Inhalation Hazard: No

**IMDG**

UN-Number: 1325 Class: 4.1 Packing group: II EMS-No: F-A, S-G  
 Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (8,9,10-trinorborn-2-ene)  
 Marine pollutant: No

**IATA**

UN-Number: 1325 Class: 4.1 Packing group: II  
 Proper shipping name: Flammable solid, organic, n.o.s. (8,9,10-trinorborn-2-ene)

**15. REGULATORY INFORMATION****OSHA Hazards**

Flammable solid

**DSL Status**

This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

	CAS-No.
8,9,10-trinorborn-2-ene	498-66-8

**SARA 302 Components**

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

**SARA 313 Components**

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.

**SARA 311/312 Hazards**

Fire Hazard

**Massachusetts Right To Know Components**

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

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
8,9,10-trinorborn-2-ene	498-66-8	

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
8,9,10-trinorborn-2-ene	498-66-8	

**California Prop. 65 Components**

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

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**16. OTHER INFORMATION****Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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