

## Material Safety Data Sheet

Version 3.1

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : (1S)-(-)-Verbenone

Product Number : W506907

Brand : Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

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2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Combustible Liquid

## GHS Label elements, including precautionary statements

Pictogram none

Signal word Warning

Hazard statement(s)  
H227 Combustible liquid

Precautionary  
statement(s) none

## 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 : (1S,5S)-2-Pinen-4-one  
(1S,5S)-4,6,6-Trimethylbicyclo[3.1.1]hept-3-en-2-one

Formula : C<sub>10</sub>H<sub>14</sub>O

Molecular Weight : 150.22 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Pin-2-en-4-one</b>			
1196-01-6	214-807-2	-	-

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#### 4. FIRST AID MEASURES

##### **General advice**

Move out of dangerous area.

##### **If inhaled**

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

##### **In case of skin contact**

Wash off with soap and plenty of water.

##### **In case of eye contact**

Flush eyes with water as a precaution.

##### **If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water.

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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.

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#### 6. ACCIDENTAL RELEASE MEASURES

##### **Personal precautions**

Avoid breathing vapors, mist or gas.

##### **Environmental precautions**

Do not let product enter drains.

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

Keep in suitable, closed containers for disposal.

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#### 7. HANDLING AND STORAGE

##### **Precautions for safe handling**

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. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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#### 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 respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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**

For prolonged or repeated contact use protective gloves.

**Eye protection**

Safety glasses with side-shields conforming to EN166

**Hygiene measures**

General industrial hygiene practice.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	clear, liquid
Colour	colourless

**Safety data**

pH	no data available
Melting point	no data available
Boiling point	227 - 228 °C (441 - 442 °F) - lit.
Flash point	85 °C (185 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	0.975 g/cm <sup>3</sup> at 20 °C (68 °F)
Water solubility	no data available

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**10. STABILITY AND REACTIVITY****Chemical stability**

Stable under recommended storage conditions.

**Conditions to avoid**

no data available

**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**

no data available

**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.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

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## 12. ECOLOGICAL INFORMATION

**Toxicity**

no data available

**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**

no data available

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## 13. DISPOSAL CONSIDERATIONS

**Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

**DOT (US)**

NA-Number: 1993    Class: CBL    Packing group: III  
Proper shipping name: Combustible liquid, n.o.s. (Pin-2-en-4-one)  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

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**15. REGULATORY INFORMATION**

**OSHA Hazards**

Combustible Liquid

**DSL Status**

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

Pin-2-en-4-one

CAS-No.  
1196-01-6

**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**

Pin-2-en-4-one

CAS-No.                      Revision Date  
1196-01-6

**New Jersey Right To Know Components**

Pin-2-en-4-one

CAS-No.                      Revision Date  
1196-01-6

**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.