ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

alpha-Pinene

Revision Date:2025-02-01 Revision Number:1

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

Product identifier

Product name	: alpha-Pinene
CBnumber	: CB8209087
CAS	: 80-56-8
EINECS Number	: 201-291-9
Synonyms	: Pinene,Pin-2(3)-ene

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

Flammable liquids, Category 3

Acute toxicity - Category 4, Oral

Aspiration hazard, Category 1

Skin irritation, Category 2

Skin sensitization, Category 1

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

Label elements

Pictogram(s)

□□□□

Signal word Danger

Hazard statement(s)

H226 Flammable liquid and vapour

H304 May be fatal if swallowed and enters airways

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P331 Do NOT induce vomiting.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P370+P378 In case of fire: Use … for extinction.

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P301+P316 IF SWALLOWED: Get emergency medical help immediately.

P331 Do NOT induce vomiting.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P333+P317 If skin irritation or rash occurs: Get medical help.

P391 Collect spillage.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: alpha-Pinene
Synonyms	: Pinene,Pin-2(3)-ene
CAS	: 80-56-8
EC number	: 201-291-9
MF	: C10H16
MW	: 136.23

SECTION 4: First aid measures

Description of first aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Harmful if swallowed, inhaled or absorbed through skin. High concentrations are extremely destructive to mucous membrane and upper respiratory tract, eyes and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. (USCG, 1999)

Indication of any immediate medical attention and special treatment needed

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Turpentine, terpenes, and related compounds

SECTION 5: Firefighting measures

Extinguishing media

Foam, carbon dioxide, dry chemical

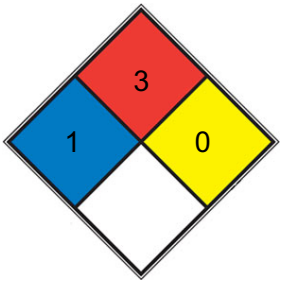
Specific Hazards Arising from the Chemical

Special Hazards of Combustion Products: Vapor may travel considerable distance to source of ignition and flashback. Container explosion may occur during fire conditions. Forms explosive mixtures in air. (USCG, 1999)

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

NFPA 704



■	HEALTH	1	Exposure would cause irritation with only minor residual injury (e.g. acetone, sodium bromate, potassium chloride)
■	FIRE	3	Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions . Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, acetone)
■	REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,N2)
□	SPEC. HAZ.		

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

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

Methods and materials for containment and cleaning up

Cover with an activated carbon adsorbent, take up and place in closed containers.

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

Keep container closed. Keep away from heat, sparks, and open flame.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Pin-2(3)-ene			
CAS No.	80-56-8			
	Limit value - Eight hours		**Limit value - Short term**	
	ppm	**mg/m^3**	**ppm**	**mg/m^3**
Belgium	20	?	?	?
Canada - Ontario	20	?	?	?
Sweden	25	150	50 (1)	300 (1)
	Remarks			
Sweden	(1) 15 minutes average value			

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/flame 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	Liquid
Colour	Clear colorless
Odour	CHARACTERISTIC ODOR OF PINE

Melting point/freezing point	-55°C
Boiling point or initial boiling point and boiling range	154-157°C
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	38°C
Auto-ignition temperature	491° F (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	1.303 cP at 25 deg C
Solubility	ALMOST INSOLUBLE IN PROPYLENE GLYCOL & GLYCERINE
Partition coefficient n-octanol/water	log Kow = 4.83
Vapour pressure	10 mm Hg at 99.1° F (NTP, 1992)
Density and/or relative density	0.858
Relative vapour density	4.7 (NTP, 1992) (Relative to Air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

Highly flammable. Insoluble in water.

Chemical stability

no data available

Possibility of hazardous reactions

Flammable liquid. A dangerous fire hazard when exposed to heat, flame, or oxidizing materials.ALPHA-PINENE may react vigorously with strong oxidizing agents. May react exothermically with reducing agents to release gaseous hydrogen.

Conditions to avoid

no data available

Incompatible materials

As the nitrosyl percholate anhydride of nitrous and perchloric acids, it is a very powerful oxidant.

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 3700 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: LC50; Species: Pimephales promelas (Fathead minnow); Conditions: feshwater, semi-static, 25.5 deg C, pH 7.70 + or -0.2, oxygen concentration 6.7 mg/mL; Concentration: 0.28 mg/L for 96 hr /98% pure 1R(+)-isover. Measured purity 91%/[USEPA; High Production Volume Information System (HPVIS). Detailed Chemical Results Chemical Name: Bicyclo

Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water flea, age <24 hr); Conditions: freshwater, static, 22 deg C, pH 8.0 (7.4-9.4), hardness 173 mg/L CaCO3, dissolved oxygen >60%; Concentration: 68000 ug/L for 24 hr (95% confidence interval: 24000-190000 ug/L) /commercial grade >80%

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Soil slurry samples taken from three different Georgia watersheds were found to readily degrade alpha-pinene under aerobic

conditions, undergoing complete removal within 250 hours after a short lag period(1,2). The concentration of alpha-pinene in seawater samples decreased from 0.41 ng/L to 0.25 ng/L when incubated with macrophytes for 6 hrs at 10 deg C(3). The concentration of alpha-pinene in the influent to a kraft mill aerated stabilization basin with a 7-8 day retention time decreased from 0.20 ppm to 0.04 ppm(4). alpha-Pinene, present at 100 mg/L, reached 95% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(5).

Bioaccumulative potential

An estimated BCF of 1,040 was calculated in fish for alpha-pinene(SRC), using a log Kow of 4.83(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is very high(SRC), provided the compound is not metabolized by the organism(SRC).

Mobility in soil

The Koc of alpha-pinene is estimated as 2,600(SRC), using a water solubility of 2.49 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that alpha-pinene is expected to have slight mobility in soil.

Toxics Screening Level

The ITSL for α-pinene is 1120 µg/m3 based on an 8-hour averaging time.

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: UN2368 (For reference only, please check.)

IMDG: UN2368 (For reference only, please check.)

IATA: UN2368 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: alpha-PINENE (For reference only, please check.)

IMDG: alpha-PINENE (For reference only, please check.)

IATA: alpha-PINENE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

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

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

PICCS

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC

Listed.

Korea Existing Chemicals List (KECL)

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/