ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

1-BUTENE

Revision Date:2026-03-20 Revision Number:1

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

Product identifier

Product name	: 1-BUTENE
CBnumber	: CB0305491
CAS	: 106-98-9
EINECS Number	: 203-449-2
Synonyms	: Butene-1

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	: 010-86108875

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)

Signal word Danger

Precautionary statements

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

P410+P403 Protect from sunlight. Store in a well-ventilated place.

Hazard statements

H220 Extremely flammable gas

H280 Contains gas under pressure; may explode if heated

SECTION 3: Composition/information on ingredients

Substance

Product name	: 1-BUTENE
Synonyms	: Butene-1
CAS	: 106-98-9
EC number	: 203-449-2
MF	: C4H8
MW	: 56.11

SECTION 4: First aid measures

If inhaled

Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician.

In case of skin contact

Take off all contaminated clothing immediately. If on skin, rinse well with water. Call a POISON CENTER or doctor/ physician.

In case of eye contact

Rinse with plenty of water. If easy to do, remove contact lens, if worn. Call a POISON CENTER or doctor/ physician.

If swallowed

Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

None known.

SECTION 5: Firefighting measures

Suitable extinguishing media

Dry powder, Foam, Water spray, Carbon dioxide (CO2)

Specific hazards during fire fighting

No information available.

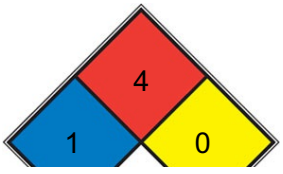
Specific extinguishing methods

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Immediately evacuate personnel to safe areas. Cool closed containers exposed to fire with water spray. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for fire-fighters

Use personal protective equipment.

NFPA 704



■	HEALTH	1	Exposure would cause irritation with only minor residual injury (e.g. acetone, sodium bromate, potassium chloride)
■	FIRE	4	Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will burn readily. Includes pyrophoric substances. Flash point below room temperature at 22.8 °C (73 °F). (e.g. acetylene, propane, hydrogen gas)
■	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 pro- cedures

Wear suitable protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

Environmental precautions

Prevent product from entering drains.

Methods and materials for containment and cleaning up

Collect as much of the spill as possible with a suitable absorbent material.

SECTION 7: Handling and storage

Handling

Technical measures

Prevent generation of vapor or mist. Take precautionary measures against static discharge. Use explosion-proof equipment.

Local/Total ventilation

Ensure adequate ventilation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Use a local exhaust ventilation.

Advice on safe handling

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not subject to grinding, shock or friction. Wash hands and face thoroughly after handling. Open drum carefully as content may be under pressure.

Avoidance of contact

Oxidizing agents

Storage

Conditions for safe storage

Keep container tightly closed. Store in a refrigerator. Keep in a well-ventilated place. Use explosion-proof equipment. Keep under inert gas.

Store locked up.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

Components	CAS RN	Value type (Form of ex- posure)	Control parameters / Permissible con- centration	Basis
Hexane	110-54-3	PC-TWA	100 mg/m3	CN OEL
	Further information: Skin			
		PC-STEL	180 mg/m3	CN OEL
	Further information: Skin			
		TWA	50 ppm	ACGIH
1-Butene	106-98-9	TWA	250 ppm	ACGIH

Components CAS RN Value type Control parameters Basis (Form of ex- / Permissible conposure) centration

Hexane 110-54-3 PC-TWA 100 mg/m3 CN OEL

Further information

Skin

PC-STEL 180 mg/m3 CN OEL

Further information

Skin

TWA 50 ppm ACGIH 1-Butene 106-98-9 TWA 250 ppm ACGIH

Engineering measures

Install a closed system or local exhaust.

Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection

Gas mask

Self-contained breathing apparatus

Eye/face protection

Safety glasses

Safety goggles

Face-shield

Skin and body protection

Impervious protective clothing

Hand protection

Impervious gloves *Use personal protective equipment(PPE) approved under appropriate government standards and follow local and national regulations.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

liquid

Color

colorless - yellow

Odor

Slightly aromatic

Odor Threshold

No data available

pH

No data available

Melting point/freezing point

-185.35℃

Boiling point/boiling range

−6.3 °C(lit.)

Flash point

80

Evaporation rate

No data available

Flammability

No data available

Upper explosion limit / Upper flammability limit

9.3%

Lower explosion limit / Lower flammability limit

9.3%

Vapor pressure

1939 mm Hg (21.1 °C)

Relative density

0.65

Solubility(ies)

Soluble in alcohol, benzene, and ether (Weast, 1986)

Water solubility

222 mg/kg at 25 °C (shake flask-GC, McAuliffe, 1966)

Solubility in other solvents

Soluble in alcohol, benzene, and ether (Weast, 1986)

Partition coefficient: n-octanol/water

No data available

Autoignition temperature

No data available

Decomposition temperature

No data available

Viscosity

Viscosity, dynamic

No data available

Viscosity, kinematic

No data available

Molecular weight

56.11 g/mol

Vapour density

1.93 (vs air)

Physical state

gas

Henry's Law Constant

(atmm^3/mol): 0.25 at 25 °C (Hine and Mookerjee, 1975)

SECTION 10: Stability and reactivity

Reactivity

No data available

Chemical stability

Polymerization may occur under the influences of heat, light or on contact with polymerization initiators such as peroxides etc.

Possibility of hazardous reactions

None under normal processing.

Conditions to avoid

Heat. Electrical spark Open flame Electrostatic discharge Exposure to air. Exposure to light.

Incompatible materials

Oxidizing agents

Hazardous decomposition products

Carbon monoxide, Carbon dioxide (CO2)

SECTION 11: Toxicological information

Acute toxicity

Components

Hexane

Acute oral toxicity

LD50 (Rat): 15,840 mg/kg Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity

TCLo (Humans): 190 ppm Exposure time: 8 Weeks Test atmosphere: gas Assessment: The substance or mixture has no acute inhalation toxicity

LC50 (Rat)

48000 ppm Exposure time: 4 h Test atmosphere: gas

Skin corrosion/irritation

Product

Result

Skin irritation

Components

Hexane

Result

Skin irritation

Serious eye damage/eye irritation

Product

Result

Eye irritation

Components

Hexane

Result

Eye irritation

Respiratory or skin sensitization

Classified based on available data. For more details, see section 2.

Germ cell mutagenicity

Classified based on available data. For more details, see section 2.

Carcinogenicity

Classified based on available data. For more details, see section 2.

Reproductive toxicity

Product

Reproductive toxicity - Assessment

Suspected human reproductive toxicant

Components

Hexane

Reproductive toxicity - Assessment

Suspected human reproductive toxicant

STOT-single exposure

Product

Assessment

May cause respiratory irritation. May cause drowsiness or dizziness.

Target Organs

Nervous system

Assessment

Causes damage to organs.

Components

Hexane

Assessment

May cause respiratory irritation. May cause drowsiness or dizziness.

STOT-repeated exposure

Components

Hexane

Target Organs

Nervous system

Assessment

Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Classified based on available data. For more details, see section 2.

Aspiration toxicity

Product

Components

Hexane

RTECS No.

MN9275000 (Hexane) EM2920500 (1-Butene)

SECTION 12: Ecological information

Ecotoxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity

Toxic to aquatic life.

Components:

Hexane:

Toxicity to fish

LC50 (Pimephales promelas (fathead minnow)): 2.5 mg/l Exposure time: 96 h LC50 (Oryzias latipes (Japanese medaka)): > 1,000 mg/l

Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3.9 mg/l Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity

Toxic to aquatic life.

Chronic aquatic toxicity

This product has no known ecotoxicological effects.

Persistence and degradability

Components:

Hexane:

Biodegradability

Biochemical oxygen demand Result: Readily biodegradable. Biodegradation: 100 %

Bioaccumulative potential

Components:

Hexane:

octanol/water

Partition coefficient: noctanol/water

3.9

1-Butene:

octanol/water

Partition coefficient: noctanol/water

2.4

Mobility in soil

Components:

Hexane:

tal compartments

Distribution among environmental compartments

Koc: 130

1-Butene:

tal compartments

Distribution among environmental compartments

Koc: 44

Other adverse effects

No data available

SECTION 13: Disposal considerations

Disposal methods

Waste from residues

Disposal in accordance with local and national regulations. Take precautions against ignition or explode. Entrust disposal to a licensed waste disposal company.

Contaminated packaging

Disposal in accordance with local and national regulations. Before disposal of used container, remove contents completely.

SECTION 14: Transport information

International Regulations

IATA-DGR

UN/ID No.

UN 1993

Proper shipping name

Flammable liquid, n.o.s.

Class

3

Packing group

II

IMDG-Code

UN number

UN 1993

Proper shipping name

FLAMMABLE LIQUID, N.O.S.

Class

3

Packing group

II

EmS Code

F-E, S-E

Domestic regulation

GB 6944/12268

UN number

UN 1993

Proper shipping name

FLAMMABLE LIQUID, N.O.S.

Class

3

Packing group

II

SECTION 15: Regulatory information

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals

Listed

The ingredients of this product are reported in the following inventories

CH BAGREG

On the inventory, or in compliance with the inventory

TSCA

All substances listed as active on the TSCA inventory

AICS

On the inventory, or in compliance with the inventory

DSL

All components of this product are on the Canadian DSL

ENCS

On the inventory, or in compliance with the inventory

ISHL

On the inventory, or in compliance with the inventory

KECI

On the inventory, or in compliance with the inventory

PICCS

On the inventory, or in compliance with the inventory

IECSC

On the inventory, or in compliance with the inventory

NZIoC

Not in compliance with the inventory

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

LD50: Lethal Dose 50%

LC50: Lethal Concentration 50%

EC50: Effective Concentration 50%

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

IMDG: International Maritime Dangerous Goods Code

IATA: International Air Transport Association

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

DOT: US Department of Transportation

NFPA: National Fire Protection Association

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety and Health Administration