

## Chemical Safety Data Sheet MSDS / SDS

**D-Ephedrine hydrochloride**

Revision Date:2026-05-31 Revision Number:1

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

Product name : D-Ephedrine hydrochloride  
CBnumber : CB5453027  
CAS : 24221-86-1  
EINECS Number : 246-090-7  
Synonyms : (+)-EPHEDRINE (HYDROCHLORIDE),(1S,2R)-(+)-Ephedrine Hydrochloride

**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**

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

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

**Hazard statements**

H370 Causes damage to organs

H225 Highly Flammable liquid and vapour

**SECTION 3: Composition/information on ingredients****Substance**

Product name	: D-Ephedrine hydrochloride
Synonyms	: (+)-EPHEDRINE (HYDROCHLORIDE),(1S,2R)-(+)-Ephedrine Hydrochloride
CAS	: 24221-86-1
EC number	: 246-090-7
MF	: C10H16ClNO
MW	: 201.69

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## SECTION 4: First aid measures

### Description of first aid measures

#### General information

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

#### After inhalation

Supply fresh air; consult doctor in case of complaints.

#### After skin contact

Generally the product does not irritate the skin.

#### After eye contact

Rinse opened eye for several minutes under running water.

#### After swallowing

Immediately call a doctor.

#### Information for doctor

#### Most important symptoms and effects, both acute and delayed

May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.

No further relevant information available.

#### Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing agents

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

## Special hazards arising from the substance or mixture

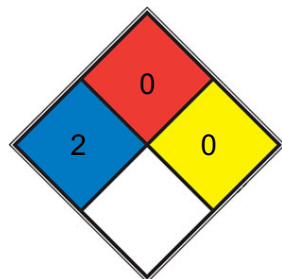
No further relevant information available.

## Advice for firefighters

## Protective equipment

No special measures required.

## NFPA 704



HEALTH 2 Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

FIRE 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,[N2](#))

SPEC.  
 HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Not required.

### Environmental precautions

Do not allow to enter sewers/ surface or ground water.

### Methods and material for containment and cleaning up

Pick up mechanically.

### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### Protective Action Criteria for Chemicals

### **PAC-1**

Substance is not listed.

### **PAC-2**

Substance is not listed.

### **PAC-3**

Substance is not listed.

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## SECTION 7: Handling and storage

### **Handling**

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

No special precautions are necessary if used correctly.

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

Avoid prolonged or repeated exposure.

Keep away from sources of ignition.

Take precautionary measures against static discharge.re.

#### **Information about protection against explosions and fires**

No special measures required.

#### **Conditions for safe storage, including any incompatibilities**

### **Storage**

Store in accordance with information listed on the product insert.

#### **Requirements to be met by storerooms and receptacles**

No special requirements.

#### **Information about storage in one common storage facility**

Not required.

#### **Further information about storage conditions**

None.

#### **Specific end use(s)**

No further relevant information available.

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## SECTION 8: Exposure controls/personal protection

### **Additional information about design of technical systems**

No further data; see item 7.

### **Control parameters**

#### **Components with limit values that require monitoring at the workplace**

Not required.

### **Additional information**

The lists that were valid during the creation were used as basis.

### **Exposure controls**

### **Personal protective equipment**

#### **General protective and hygienic measures**

Wash hands before breaks and at the end of work.

#### **Breathing equipment**

Not required.

#### **Protection of hands**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

#### **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

#### **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

#### **Eye protection**

Not required.

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## SECTION 9: Physical and chemical properties

### **Information on basic physicochemical properties**

#### **Appearance**

#### **Physical State**

Solid

#### **Color**

According to product specification

**Odor**

Characteristic

**Structural Formula**

C<sub>10</sub>H<sub>15</sub>NO HCl

**Molecular Weight**

201.7 g/mol

**Odor Threshold**

Not determined.

**pH**

Not applicable.

**Change in condition****Melting point/Melting range**

200 °C (392 °F)

**Boiling point/Boiling range**

Undetermined.

**Flash point**

9 °C

**Flammability (solid,gas)**

Product is not flammable.

**Decomposition temperature**

Not determined.

**Auto igniting**

Not determined.

**Danger of explosion**

Product does not present an explosion hazard.

**Explosion limits**

Lower: Not determined.

Upper: Not determined.

**Vapor Pressure**

Not applicable.

**Density**

Not determined.

#### **Relative Density**

Not determined.

#### **Vapor Density**

Not applicable.

#### **Evaporation Rate**

Not applicable.

#### **Solubility in / Miscibility with**

DMF: 10 mg/ml; DMSO: 3 mg/ml; Ethanol: 10 mg/ml; PBS (pH 7.2): 5 mg/ml

#### **Water**

Not determined.

#### **Partition coefficient (n-octanol/water)**

Not determined.

#### **Viscosity**

##### **Dynamic**

Not applicable.

##### **Kinematic**

Not applicable.

#### **SOLUBILITY**

DMF: 10 mg/ml; DMSO: 3 mg/ml; Ethanol: 10 mg/ml; PBS (pH 7.2): 5 mg/ml

#### **Other information**

No information available

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## SECTION 10: Stability and reactivity

#### **Reactivity**

No further relevant information available.

#### **Chemical stability**

#### **Thermal decomposition / conditions to be avoided**

No decomposition if used according to specifications.

#### **Possibility of hazardous reactions**

No dangerous reactions known.

### Conditions to avoid

No further relevant information available.

### Incompatible materials

oxidizing agents

### Hazardous decomposition products

carbon dioxide, carbon monoxide, hydrogen chloride gas, nitrogen oxides

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## SECTION 11: Toxicological information

### RTECS Number

KB1925000

### Information on toxicological effects

#### Acute toxicity

LD/LC50 values that are relevant for classification:

Route	Endpoint	Value
Oral	LD50	785 mg/kg (mouse)
Intraperitoneal	LD50	248 mg/kg (mouse)
Subcutaneous	LD50	425 mg/kg (mouse)
Subcutaneous	LDLO	160 mg/kg (rat)

#### Primary irritant effect

##### on the skin

No irritant effect.

##### on the eye

No irritating effect.

#### Sensitization

No sensitizing effects known.

### Additional toxicological information

#### Carcinogenic categories

#### IARC (International Agency for Research on Cancer)

Substance is not listed.

#### NTP (National Toxicology Program)

Substance is not listed.

## **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

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## **SECTION 12: Ecological information**

### **Toxicity**

#### **Aquatic toxicity**

No further relevant information available.

#### **Persistence and degradability**

No further relevant information available.

#### **Behavior in environmental systems**

#### **Bioaccumulative potential**

No further relevant information available.

#### **Mobility in soil**

No further relevant information available.

#### **Additional ecological information**

#### **General notes**

Water hazard class 1 (Self-assessment) slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

#### **Results of PBT and vPvB assessment**

##### **PBT**

Not applicable.

##### **vPvB**

Not applicable.

##### **PBT:**

Not applicable.

##### **vPvB:**

Not applicable.

#### **Other adverse effects**

No further relevant information available.

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## SECTION 13: Disposal considerations

### **Waste treatment methods**

#### **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

### **Uncleaned packagings**

#### **Recommendation**

Disposal must be made according to official regulations.

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## SECTION 14: Transport information

### **UN-Number**

DOT, IMDG, IATA not regulated

### **UN proper shipping name**

DOT, IMDG, IATA not regulated

### **Transport hazard class(es)**

DOT, ADN, IMDG, IATA

Class not regulated

### **Packing group**

DOT, IMDG, IATA not regulated

### **Environmental hazards**

Not applicable.

### **Special precautions for user**

Not applicable.

### **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

MARPOL73/78 and the IBC Code Not applicable.

### **UN "Model Regulation": not regulated**

not regulated

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## SECTION 15: Regulatory information

### **Safety, health and environmental regulations/legislation specific for the substance or mixture**

No further relevant information available.

## Sara

Section 355 (extremely hazardous substances):	Substance is not listed.
Section 313 (Specific toxic chemical listings):	Substance is not listed.
TSCA (Toxic Substances Control Act):	ACTIVE
Hazardous Air Pollutants:	Substance is not listed.

## Proposition 65

Chemicals known to cause cancer:	Substance is not listed.
Chemicals known to cause reproductive toxicity for females:	Substance is not listed.
Chemicals known to cause reproductive toxicity for males:	Substance is not listed.
Chemicals known to cause developmental toxicity:	Substance is not listed.

### Chemicals known to cause cancer

Substance is not listed.

### Chemicals known to cause reproductive toxicity for females

Substance is not listed.

### Chemicals known to cause reproductive toxicity for males

Substance is not listed.

### Chemicals known to cause developmental toxicity

Substance is not listed.

### Carcinogenic categories

EPA (Environmental Protection Agency):	Substance is not listed.
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### TLV (Threshold Limit Value)

Substance is not listed.

### NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

### Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

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## SECTION 16: Other information

### Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Toxicity - Oral 4: Acute toxicity – Category 4

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.