

## Chemical Safety Data Sheet MSDS / SDS

**(1S,2S)-N,N-Bis[2-(diphenylphosphino)benzyl]cyclohexane-1,2-diamine, min. 97%**

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

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

Product name : (1S,2S)-N,N-Bis[2-(diphenylphosphino)benzyl]cyclohexane-1,2-diamine, min. 97%  
CBnumber : CB42527008  
CAS : 174677-83-9  
Synonyms : (1S,2S)-N,N-Bis[2-(diphenylphosphino)benzyl]cyclohexane-1,2-diamine

**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

Warning

**Precautionary statements**

P302+P352 IF ON SKIN: wash with plenty of soap and water.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

**Hazard statements**

H335 May cause respiratory irritation  
H319 Causes serious eye irritation  
H315 Causes skin irritation  
H302 Harmful if swallowed

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

## Substance

|              |                                                                                 |
|--------------|---------------------------------------------------------------------------------|
| Product name | : (1S,2S)-N,N-Bis[2-(diphenylphosphino)benzyl]cyclohexane-1,2-diamine, min. 97% |
| Synonyms     | : (1S,2S)-N,N-Bis[2-(diphenylphosphino)benzyl]cyclohexane-1,2-diamine           |
| CAS          | : 174677-83-9                                                                   |
| MF           | : C44H44N2P2                                                                    |
| MW           | : 662.78                                                                        |

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## SECTION 4: First aid measures

### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

### Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur.

### Ingestion

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

### Most important symptoms and effects

None reasonably foreseeable.

### Self-Protection of the First Aider

No special precautions required.

### Notes to Physician

Treat symptomatically.

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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Extinguishing media which must not be used for safety reasons

No information available.

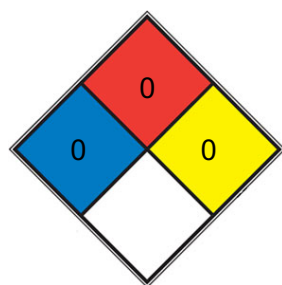
### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## NFPA 704



**HEALTH** 0 Poses no health hazard, no precautions necessary and would offer no hazard beyond that of ordinary combustible materials

**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.**

## SECTION 6: Accidental release measures

### Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

### Environmental Precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

### Methods for Containment and Clean Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: Handling and storage

### Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

### Storage

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

### Specific Use(s)

Use in laboratories

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## SECTION 8: Exposure controls/personal protection

### Control Parameters

### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

### Exposure Controls

### Engineering Measures

None under normal use conditions. .

### Personal protective equipment

#### Eye Protection

Wear safety glasses with side shields (or goggles) (European standard - EN 166)

#### Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Natural rubber | See manufacturers | -               | EN 374      | (minimum requirement) |
| Nitrile rubber | recommendations   |                 |             |                       |
| Neoprene       |                   |                 |             |                       |
| PVC            |                   |                 |             |                       |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g.

sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

#### Skin and body protection

Long sleeved clothing

#### Respiratory Protection

No protective equipment is needed under normal use conditions.

#### Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

#### Recommended Filter type: Particle filter

#### Small scale/Laboratory use

Maintain adequate ventilation

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

## Environmental exposure controls

No information available.

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# SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

Yellow

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### Physical State

Solid

### Odor

Unpleasant

### Odor Threshold

No data available

### pH

No information available

### Melting Point/Range

No data available

### Softening Point

No data available

### Boiling Point/Range

749.8±60.0 °C(Predicted)

### Flash Point

No information available

Method - No information available

### Evaporation Rate

Not applicable Solid

### Flammability (solid,gas)

No information available

### Explosion Limits

No data available

**Vapor Pressure**

No data available

**Vapor Density**

Not applicable Solid

**Specific Gravity / Density**

No data available

**Bulk Density**

No data available

**Water Solubility**

Insoluble in water

**Solubility in other solvents**

No information available

**Partition Coefficient (n-octanol/water)**

No data available

**Autoignition Temperature**

No data available

**Decomposition Temperature**

No data available

**Viscosity**

Not applicable Solid

**Explosive Properties**

No information available

**Oxidizing Properties**

No information available

**Molecular Formula**

C<sub>44</sub> H<sub>44</sub> N<sub>2</sub> P<sub>2</sub>

**Molecular Weight**

662.78

**Colour**

yellow

## SECTION 10: Stability and reactivity

### Stability

Air sensitive.

### Hazardous Reactions

None under normal processing.

### Hazardous Polymerization

No information available.

### Conditions to Avoid

None known.

### Materials to avoid

No information available.

### Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Oxides of phosphorus.

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## SECTION 11: Toxicological information

### Product Information

#### (a) acute toxicity;

#### (b) skin corrosion/irritation;

No data available

#### (c) serious eye damage/irritation;

No data available

#### (d) respiratory or skin sensitization;

##### Respiratory

No data available

##### Skin

No data available

#### (e) germ cell mutagenicity;

No data available

#### (f) carcinogenicity;

No data available

There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;**

No data available

**(h) STOT-single exposure;**

No data available

**(i) STOT-repeated exposure;**

No data available

**Target Organs**

No information available.

**(j) aspiration hazard;**

Not applicable

Solid

**Symptoms / effects, both acute and delayed**

No information available

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## SECTION 12: Ecological information

**Ecotoxicity effects**

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

**Persistence and Degradability**

**Persistence**

Insoluble in water.

**Bioaccumulative Potential**

May have some potential to bioaccumulate

**Mobility in soil**

Spillage unlikely to penetrate soil. Is not likely mobile in the environment due to its low water solubility.

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors.

**Persistent Organic Pollutant**

This product does not contain any known or suspected substance.

**Ozone Depletion Potential**

This product does not contain any known or suspected substance.

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## SECTION 13: Disposal considerations

## **Waste from Residues/Unused Products**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## **Contaminated Packaging**

Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.

## **Other Information**

Waste codes should be assigned by the user based on the application for which the product was used.

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# **SECTION 14: Transport information**

## **Road and Rail Transport**

Not Regulated

## **IMDG/IMO**

Not regulated

## **IATA**

Not regulated

## **Special Precautions for User**

No special precautions required

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# **SECTION 15: Regulatory information**

## **International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

## **National Regulations**

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# **SECTION 16: Other information**

## **Prepared By**

Health, Safety and Environmental Department

## **Revision Date**

24-Oct-2025

## **Revision Summary**

Not applicable.

## **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

## **Legend**

### **CAS**

Chemical Abstracts Service

### **TSCA**

United States Toxic Substances Control Act Section 8(b)

Inventory

### **EINECS/ELINCS**

European Inventory of Existing Commercial Chemical

Substances/EU List of Notified Chemical Substances

### **DSL/NDSL**

Canadian Domestic Substances List/Non-Domestic

Substances List

### **PICCS**

Philippines Inventory of Chemicals and Chemical Substances

### **ENCS**

Japanese Existing and New Chemical Substances

### **IECSC**

Chinese Inventory of Existing Chemical Substances

### **AICS**

Australian Inventory of Chemical Substances

### **KECL**

Korean Existing and Evaluated Chemical Substances

### **NZIoC**

New Zealand Inventory of Chemicals

### **WEL**

Workplace Exposure Limit

### **TWA**

Time Weighted Average

### **ACGIH**

American Conference of Governmental Industrial Hygienists

### **IARC**

International Agency for Research on Cancer

### **DNEL**

Derived No Effect Level

### **PNEC**

Predicted No Effect Concentration

### **RPE**

Respiratory Protective Equipment

### **LD50**

Lethal Dose 50%

**LC50**

Lethal Concentration 50%

**EC50**

Effective Concentration 50%

**NOEC**

No Observed Effect Concentration

**POW**

Partition coefficient Octanol:Water

**PBT**

Persistent, Bioaccumulative, Toxic

**vPvB**

very Persistent, very Bioaccumulative

**ICAO/IATA**

International Civil Aviation Organization/International Air  
Transport Association

**IMO/IMDG**

International Maritime Organization/International Maritime  
Dangerous Goods Code

**ADR**

European Agreement Concerning the International Carriage of  
Dangerous Goods by Road

**MARPOL**

International Convention for the Prevention of Pollution from  
Ships

**OECD**

Organisation for Economic Co-operation and Development

**ATE**

Acute Toxicity Estimate

**BCF**

Bioconcentration factor

**VOC**

(Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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