

## Chemical Safety Data Sheet MSDS / SDS

**Dichlorophenylphosphine**

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

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

Product name : Dichlorophenylphosphine  
CBnumber : CB7304468  
CAS : 644-97-3  
EINECS Number : 211-425-8  
Synonyms : BPD,dichlorophenylphosphine

**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**

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

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

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

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

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**Hazard statements**

H301 Toxic if swallowed

H314 Causes severe skin burns and eye damage

H335 May cause respiratory irritation

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: Dichlorophenylphosphine
Synonyms	: BPD,dichlorophenylphosphine
CAS	: 644-97-3
EC number	: 211-425-8
MF	: C6H5Cl2P
MW	: 178.98

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## SECTION 4: First aid measures

### General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

### Inhalation

If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Remove to fresh air. Immediate medical attention is required.

### Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

### Most important symptoms and effects

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### Notes to Physician

Treat symptomatically. Symptoms may be delayed.

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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

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

Contact with water liberates toxic gas. Water.

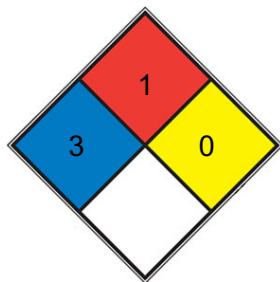
### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.  
Reacts violently with water.

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

### NFPA 704



**HEALTH 3** Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE 1** Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

**REACT 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

**SPEC.**  
**HAZ.**

## SECTION 6: Accidental release measures

### Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### Environmental Precautions

Should not be released into the environment.

### Methods for Containment and Clean Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water.

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: Handling and storage

### Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. Handle under an inert atmosphere.

### Storage

Keep away from water or moist air. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Store under an inert atmosphere. Air sensitive.

### Specific Use(s)

Use in laboratories

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## SECTION 8: Exposure controls/personal protection

### Control Parameters

### Exposure Controls

### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

### Personal protective equipment

#### Eye Protection

Goggles (European standard - EN 166)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	See manufacturers	-	EN 374	(minimum requirement)

#### Viton (R)

recommendations

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**

Wear appropriate protective gloves and clothing to prevent skin exposure

#### **Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

#### **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: Organic gases and vapours filter Type A Brown conforming to EN14387

#### **Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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

When RPE is used a face piece Fit Test should be conducted

#### **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**

Clear

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#### **Physical State**

Liquid

#### **Odor**

pungent

#### **Odor Threshold**

No data available

#### **pH**

No information available

#### **Melting Point/Range**

51 °C / -59.8 °F

**Softening Point**

No data available

**Boiling Point/Range**

225 °C / 437 °

F @ 760 mmHg

**Flash Point**

102 °C / 215.6 °F Method - Open cup

**Evaporation Rate**

No data available

**Flammability (solid,gas)**

Not applicable Liquid

**Explosion Limits**

No data available

**Vapor Pressure**

No data available

**Vapor Density**

No data available (Air = 1.0)

**Specific Gravity / Density**

1.319

**Bulk Density**

Not applicable Liquid

**Water Solubility**

Reacts with water

**Solubility in other solvents**

No information available

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

No data available

**Autoignition Temperature**

159 °C / 318.2 °F

**Decomposition Temperature**

No data available

**Viscosity**

No data available

**Explosive Properties**

No information available

**Oxidizing Properties**

No information available

**Molecular Formula**

C6 H5 Cl2 P

**Molecular Weight**

178.99

**Colour**

Clear colorless to slightly yellow

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**SECTION 10: Stability and reactivity****Stability**

Reacts violently with water. Moisture sensitive. Air sensitive.

**Hazardous Reactions**

None under normal processing. Reacts violently with water.

**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Conditions to Avoid**

Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture.

Exposure to air.

**Materials to avoid**

Strong oxidizing agents.

**Hazardous Decomposition Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Oxides of phosphorus. Phosphorus trihydride (phosphine). Hydrogen chloride gas.

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**SECTION 11: Toxicological information****Product Information****(a) acute toxicity;**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phenyl phosphorus dichloride	500-2000 mg/kg ( Rat )		

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

Category 1 B

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

Category 1

**(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**

None known.

**(j) aspiration hazard;**

No data available

**Other Adverse Effects**

The toxicological properties have not been fully investigated.

**Symptoms / effects,both acute and Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.**

**delayed**

Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue

and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

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## SECTION 12: Ecological information

### Ecotoxicity effects

Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

### Persistence and Degradability

#### Persistence

Soluble in water, Persistence is unlikely, based on information available.

#### Degradability

Reacts with water.

#### Degradation in sewage

Water reactive.

#### treatment plant

### Bioaccumulative Potential

Bioaccumulation is unlikely; Product does not bioaccumulate due to reaction with water

Component	log Pow	Bioconcentration factor (BCF)
Phenyl phosphorus dichloride		2 - 10 dimensionless

### Mobility in soil

The product is water soluble, and may spread in water systems Reacts with water Will likely be mobile in the environment due to its water solubility Is not likely mobile in the environment Highly mobile in soils

### 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

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

## Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

## Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms.

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## SECTION 14: Transport information

### Road and Rail Transport

**UN-No**

UN2798

**Proper Shipping Name**

PHENYLPHOSPHORUS DICHLORIDE

**Hazard Class**

8

**Packing Group**

II

**IMDG/IMO****UN-No**

UN2798

**Proper Shipping Name**

PHENYLPHOSPHORUS DICHLORIDE

**Hazard Class**

8

**Packing Group**

II

**IATA****UN-No**

UN2798

**Proper Shipping Name**

PHENYLPHOSPHORUS DICHLORIDE

**Hazard Class**

8

**Packing Group**

II

**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).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Phenyl phosphorus dichloride	X	X	X	X	211-425-8	X	-	X	X	X	X	KE-05-0452

## National Regulations

## SECTION 16: Other information

### Revision Summary

Not applicable.

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene. Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Chemical incident response training.

### 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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