

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

---

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Hydrazobenzene

### 1.2 Other means of identification

**Product number** -  
**Other names** 1,2-Diphenyldiazane; N,N'-Diphenylhydrazine; 1,2-diphenyldiazane

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.  
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Shanghai Yien Chemical Technology Co., Ltd  
**Address** Building 6, 28 Yingong Road, Fengxian District, Shanghai  
Chemical Industry Zone, Shanghai, 201400, China  
**Telephone** +86-400-133-2688

### 1.5 Emergency phone number

**Emergency phone number** +86-400-133-2688  
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

---

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral  
Carcinogenicity, Category 1B  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Danger  
**Hazard statement(s)** H302 Harmful if swallowed  
H350 May cause cancer

	H410 Very toxic to aquatic life with long lasting effects
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P203 Obtain, read and follow all safety instructions before use. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P273 Avoid release to the environment.
<b>Response</b>	P301+P317 IF SWALLOWED: Get medical help. P330 Rinse mouth. P318 IF exposed or concerned, get medical advice. P391 Collect spillage.
<b>Storage</b>	P405 Store locked up.
<b>Disposal</b>	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.

### 2.3 Other hazards which do not result in classification

no data available

---

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Hydrazobenzene	Hydrazobenzene	122-66-7	204-563-5	100%

---

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Refer for medical attention .

### 4.2 Most important symptoms/effects, acute and delayed

**SYMPTOMS:** Symptoms of exposure to this compound may include irritation.

**ACUTE/CHRONIC HAZARDS:** This compound is harmful if swallowed, inhaled or absorbed through the skin. It may cause irritation. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide and nitrogen oxides. (NTP, 1992)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Specific treatment for exposure consists of thorough washing of all exposed skin areas with soap and water, copious irrigation of the eyes, and prompt removal of the patient from the source of exposure. Hydrazines

---

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. A water spray may also be used. (NTP, 1992)

## 5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

## 5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

### 6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

### 6.3 Methods and materials for containment and cleaning up

PRECAUTIONS FOR "CARCINOGENS": A high efficiency particulate arrestor (HEPA) or charcoal filters can be used to minimize amt of carcinogen in exhausted air ventilated safety cabinets, lab hoods, glove boxes, or animal rooms ... Filter housing that is designed so that used filters can be transferred into plastic bag without contaminating maintenance staff is avail commercially. Filters should be placed in plastic bags immediately after removal ... The plastic bag should be sealed immediately ... The sealed bag should be labelled properly ... Waste liquids ... should be placed or collected in proper containers for disposal. The lid should be secured & the bottles properly labelled. Once filled, bottles should be placed in plastic bag, so that outer surface ... is not contaminated ... The plastic bag should also be sealed & labelled. ... Broken glassware ... should be decontaminated by solvent extraction, by chemical destruction, or in specially designed incinerators. Chemical Carcinogens

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames. 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.

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

Separated from food and feedstuffs. Store in an area without drain or sewer access. PRECAUTIONS FOR "CARCINOGENS": Storage site should be as close as practicable to lab in which carcinogens are to be used, so that only small quantities required for ... expt need to be carried. Carcinogens should be kept in only one section of cupboard, an explosion proof refrigerator or freezer (depending on chemico-physical properties ...) that bears appropriate label. An inventory ... should be kept, showing quantity of carcinogen & date it was acquired ... Facilities for dispensing ... should be contiguous to storage area. Chemical Carcinogens

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

MAK: carcinogen category: 2

#### Biological limit values

no data available

## 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## 8.3 Individual protection measures, such as personal protective equipment (PPE)

### Eye/face protection

Wear safety spectacles or eye protection in combination with breathing protection.

### Skin protection

Protective gloves. Protective clothing.

### Respiratory protection

Use local exhaust or breathing protection.

### Thermal hazards

no data available

---

## SECTION 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	PHYSICAL DESCRIPTION: Orange powder or a bright orange crystalline solid. (NTP, 1992)
<b>Colour</b>	Tablets from alcohol and ether
<b>Odour</b>	no data available
<b>Melting point/freezing point</b>	270°C(lit.)
<b>Boiling point or initial boiling point and boiling range</b>	194°C(lit.)
<b>Flammability</b>	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	91°C(lit.)
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	125-131°C
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	less than 0.1 mg/mL at 64° F (NTP, 1992)
<b>Partition coefficient n-octanol/water</b>	log Kow= 2.94
<b>Vapour pressure</b>	0.07mmHg at 25°C
<b>Density and/or relative density</b>	1.143g/cm <sup>3</sup>
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Decomposes on burning. This produces toxic fumes including nitrogen oxides. Reacts with mineral acids. This produces benzidine (see ICSC 0224).

### 10.2 Chemical stability

Hydrazobenzene (10 ug/L) in dilute aqueous solution was found to be unstable with less than 10% remaining for longer than one day of preservation (in the dark) under any of the

conditions tested (ie, room temperature or 4 deg C at pH 2,7, or 10 and with or without chlorine).

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

1,2-DIPHENYLHYDRAZINE is a mild reducing agent. Incompatible with strong oxidizing agents, strong acids, acid chlorides and acid anhydrides. Interaction with perchloryl fluoride in the presence of a diluent below 32°F has caused separation of explosive solids. Is readily oxidized by nitric acid, silver nitrate or permanganate. Is reduced under alkaline conditions (NTP, 1992).

### **10.4 Conditions to avoid**

no data available

### **10.5 Incompatible materials**

no data available

### **10.6 Hazardous decomposition products**

When heated to decomposition it emits toxic fumes of /nitrogen oxides/.

---

## **SECTION 11: Toxicological information**

### **Acute toxicity**

- Oral: no data available
- 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**

CLASSIFICATION: B2; probable human carcinogen. BASIS FOR CLASSIFICATION: Positive results of studies in both rats and mice form the basis for this classification. Two apparently negative studies lack information on compound purity, experimental design, and statistical treatment. HUMAN CARCINOGENICITY DATA: None.

### **Reproductive toxicity**

No information is available on the reproductive or developmental effects of 1,2-diphenylhydrazine in humans. In one study, no effects on reproductive organs were found in rats and mice exposed via ingestion.

### **STOT-single exposure**

May cause mechanical irritation.

### **STOT-repeated exposure**

This substance is probably carcinogenic to humans.

### **Aspiration hazard**

A harmful concentration of airborne particles can be reached quickly when dispersed.

---

## **SECTION 12: Ecological information**

## 12.1 Toxicity

- Toxicity to fish: LC50 *Lepomis macrochirus* (bluegill) 1.2 mg/L/24 hr (static bioassay, total water hardness 28-44 mg/L calcium carbonate, pH 6.7-7.4, oxygen concn 5.3-7.0 mg/L)
- Toxicity to daphnia and other aquatic invertebrates: LC50 *Daphnia magna* (water flea) 8.1 mg/L/24 hr /Conditions of bioassay not specified
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

## 12.2 Persistence and degradability

1,2-Diphenylhydrazine is degraded by sludge microorganisms(1). Using a static screening test, 1,2-diphenylhydrazine was inoculated with domestic wastewater and incubated for 7 days followed by 3 weekly subcultures (totaling 28 days of incubation); degradation of 1,2-diphenylhydrazine at 5 mg/l was reported as 80, 73, 66, and 77% for the original, first, second, and third subculture. Degradation of 1,2-diphenylhydrazine at 10 mg/l was reported as 72, 55, 40, and 40% for the original, first, second, and third subculture(2). This pattern was believed to indicate a process of initially significant degradation with gradual adaptation followed by a deadaptive process(2).

## 12.3 Bioaccumulative potential

The weighted average bioconcentration factor for 1,2-diphenylhydrazine was reported to be 29 for the edible portions of fish and shellfish consumed by Americans(1). According to a classification scheme(2), this BCF value suggests that bioconcentration in aquatic organisms is low(SRC)

## 12.4 Mobility in soil

The Koc of 1,2-diphenylhydrazine is estimated as approximately 950(SRC), using a measured log Kow of 2.94(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 1,2-diphenylhydrazine has low mobility in soil(SRC).

## 12.5 Other adverse effects

no data available

---

## SECTION 13: Disposal considerations

### 13.1 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

### 14.1 UN Number

ADR/RID: UN3077 (For reference only, please check.)

IMDG: UN3077 (For reference only, please check.)

IATA: UN3077 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID:  
ENVIRONMENTALLY  
HAZARDOUS SUBSTANCE,

IMDG:  
ENVIRONMENTALLY  
HAZARDOUS  
SUBSTANCE, SOLID,

IATA:  
ENVIRONMENTALLY  
HAZARDOUS  
SUBSTANCE, SOLID,

SOLID, N.O.S. (For reference only, please check.) N.O.S. (For reference only, please check.) N.O.S. (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.) IMDG: 9 (For reference only, please check.) IATA: 9 (For reference only, please check.)

### 14.4 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.)

### 14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

---

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Hydrazobenzene	Hydrazobenzene	122-66-7	204-563-5
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)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Not Listed.

---

## SECTION 16: Other information

### Information on revision

Creation Date July 15, 2019

Revision Date July 15, 2019

### 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](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/>

### **Other Information**

Do NOT take working clothes home. Depending on the degree of exposure, periodic medical examination is suggested.

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

---

*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*