

# SAFETY DATA SHEETS

According to the UN GHS revision 9

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

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## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name                      Phthalic acid

### 1.2 Other means of identification

Product number                      -  
Other names                              1,2-Benzenedicarboxylic acid

### 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).

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## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Serious eye damage, Category 1

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word                                      Danger  
Hazard statement(s)                              H318 Causes serious eye damage  
Precautionary statement(s)  
Prevention                                        P280 Wear protective gloves/protective clothing/eye  
protection/face protection/hearing protection/...  
Response    P305+P354+P338 IF IN EYES: Immediately rinse with water  
for several minutes. Remove contact lenses, if present and easy

	to do. Continue rinsing. P317 Get medical help.
<b>Storage</b>	none
<b>Disposal</b>	none

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

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Phthalic acid	Phthalic acid	88-99-3	201-873-2	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Rinse and then wash skin with water and soap.

#### Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

#### Following ingestion

Rinse mouth.

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

**SYMPTOMS:** Symptoms of exposure to this compound may include irritation of the skin, eyes, mucous membranes, and respiratory passages. In high concentrations, it can cause narcosis. **ACUTE/CHRONIC HAZARDS:** This compound is an irritant of the skin, eyes, mucous membranes, and respiratory tract. It is narcotic in high concentrations. When heated, it decomposes to a compound which in the form of dust is an explosion hazard. Hazardous decomposition products include carbon oxides. (NTP, 1992)

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

Inhalation Exposure: Fresh air, rest. Skin Exposure: Remove contaminated clothes. Rinse and then wash skin with water and soap. Eye exposure: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor. Ingestion: Rinse mouth.

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Powder, water spray, foam, carbon dioxide.

### 5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

### 5.3 Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

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## 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. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

## 6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

## 6.3 Methods and materials for containment and cleaning up

Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting (extra personal protection: P1 filter respirator for inert particles).

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. 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

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

no data available

#### 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.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use local exhaust.

#### Thermal hazards

no data available

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

<b>Physical state</b>	Solid. Crystalline.
<b>Colour</b>	Colourless.
<b>Odour</b>	no data available
<b>Melting point/freezing</b>	191 °C. Atm. press.: 1 013 hPa.

<b>point</b>	
<b>Boiling point or initial boiling point and boiling range</b>	289 °C. Atm. press.:1 013 hPa.
<b>Flammability</b>	Combustible.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	168 °C.
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	191°C
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	less than 1 mg/mL at 68° F (NTP, 1992)
<b>Partition coefficient n-octanol/water</b>	log Pow = 0.73.
<b>Vapour pressure</b>	0 hPa. Temperature:25 °C. Remarks:Antoine Method.;0 hPa. Temperature:25 °C. Remarks:Modified Grain Method.;0 hPa. Temperature:25 °C. Remarks:Mackay Method.
<b>Density and/or relative density</b>	1.59 g/cm <sup>3</sup> . Temperature:15 °C.
<b>Relative vapour density</b>	5.73 (AIR= 1)
<b>Particle characteristics</b>	no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The solution in water is a weak acid.

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

Combustible when heated. Dust explosion possible if in powder or granular form, mixed with air. PHTHALIC ACID is a carboxylic acid. This chemical is sensitive to exposure to extreme heat. This compound reacts violently with nitric acid. It is incompatible with sodium nitrite. It is also incompatible with oxidizers. (NTP, 1992).

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Mixtures of sodium nitrite and phthalic acid or phthalic anhydride explode violently on heating. A nitrite ester may have been produced.

### 10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - mouse (male/female) - > 5 000 mg/kg bw.
- Inhalation: LC50 - rat (male/female) - > 5 058 mg/m<sup>3</sup> air.
- 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**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract.

**STOT-repeated exposure**

no data available

**Aspiration hazard**

A nuisance-causing concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

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**SECTION 12: Ecological information****12.1 Toxicity**

- Toxicity to fish: LC50 - *Danio rerio* (previous name: *Brachydanio rerio*) - 560 mg/L - 7 d.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - > 640 mg/L - 48 h.
- Toxicity to algae: EC0 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) -  $\geq$  100 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - *Pseudomonas putida* - 213 mg/L - 16 h.

**12.2 Persistence and degradability**

AEROBIC: After an acclimation of an activated sludge inoculum for 24 days, 95% of phthalate was consumed in a respiratory test(1). Phthalic acid completely degraded in 2 days in a screening test using a soil inoculum(2). Over 99% primary degradation was obtained in the semicontinuous activated sludge test of the Soap and Detergent Association(3). Degradation by some microorganisms is impeded when phthalic acid is adsorbed on particles such as aluminum oxide(4). Five day BOD studies have shown 78% degradation of phthalic acid(5). A biodegradation rate constant for phthalic acid of 1.56/day was measured in river water corresponding to a half life of 10.7 hrs(6). A half life of 2 days was measured in sludge amended soil(7). Phthalic acid rapidly degraded in Chalmers soil (1.96% organic carbon, pH 6.0); 100% decomposition, as determined by CO<sub>2</sub> evolution, was obtained after 53 days(8). In a river die-away test using water from the Mississippi River at St Louis, phthalic acid completely disappeared in 2.5 and 5 wks at concns of 12.5 and 50 mg/L, respectively(9). In another river die-away test using Missouri River water and carboxyl-labeled <sup>14</sup>C-phthalic acid, 66-92% mineralization was obtained in 32 days(10). Bacteria that grew aerobically on phthalic acid were found in sediment and water from the estuary of the Mississippi River indicating the potential for phthalic acid biodegradation in the marine environment(11).

**12.3 Bioaccumulative potential**

An estimated BCF of 3 was calculated for phthalic acid(SRC), using a log Kow of 0.73(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

**12.4 Mobility in soil**

The Koc values were determined for an acidic forest soil (Podzol, 4.85% organic carbon, pH 2.8), an agricultural soil (Alfisol, 1.25% organic carbon, pH 6.7) and a sublimnic soil (sediment from Lake Constance, Germany, 1.58% organic carbon, pH 7.1) as 31, 2 and 2, respectively(1). According to a classification scheme(2), these Koc values suggest that phthalic acid is expected to have very high mobility in soil. Phthalic acid adsorbs strongly to aluminum and iron oxides via a surface ligand exchange reaction(3). Adsorptivity is sensitive to pH; for aluminum oxide the fraction absorbed is >0.8 below pH 6 and falls below 0.1 above pH 7.5(3).

## 12.5 Other adverse effects

no data available

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## 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.

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## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.5 Environmental hazards

ADR/RID: No	IMDG: No	IATA: No
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### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

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## 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
Phthalic acid	Phthalic acid	88-99-3	201-873-2
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			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			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)			Listed.

## SECTION 16: Other information

### Information on revision

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### 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/>

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

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