



# 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** 4-methyl-o-phenylenediamine

### 1.2 Other means of identification

**Product number** -

**Other names** 1,2-Benzenediamine, 4-methyl-; 3,4-DiaMinotoluene; 4-methylbenzene-1,2-diamine

### 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 3, Oral  
Acute toxicity - Category 4, Dermal  
Skin sensitization, Category 1  
Eye irritation, Category 2  
Acute toxicity - Category 4, Inhalation  
Germ cell mutagenicity, Category 2  
Carcinogenicity, Category 1B  
Reproductive toxicity, Category 2  
Specific target organ toxicity – repeated exposure, Category 2  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



|                                   |  |
|-----------------------------------|--|
| <b>Signal word</b>                | Danger   |
| <b>Hazard statement(s)</b>        | H301 Toxic if swallowed<br>H312 Harmful in contact with skin<br>H317 May cause an allergic skin reaction<br>H319 Causes serious eye irritation<br>H332 Harmful if inhaled<br>H341 Suspected of causing genetic defects<br>H350 May cause cancer<br>H361 Suspected of damaging fertility or the unborn child<br>H373 May cause damage to organs through prolonged or repeated exposure<br>H411 Toxic to aquatic life with long lasting effects  |
| <b>Precautionary statement(s)</b> |  |
| <b>Prevention</b>                 | P264 Wash ... thoroughly after handling.<br>P270 Do not eat, drink or smoke when using this product.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...<br>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.<br>P272 Contaminated work clothing should not be allowed out of the workplace.<br>P271 Use only outdoors or in a well-ventilated area.<br>P203 Obtain, read and follow all safety instructions before use.<br>P260 Do not breathe dust/fume/gas/mist/vapours/spray.<br>P273 Avoid release to the environment.  |
| <b>Response</b>                   | P301+P316 IF SWALLOWED: Get emergency medical help immediately.<br>P321 Specific treatment (see ... on this label).<br>P330 Rinse mouth.<br>P302+P352 IF ON SKIN: Wash with plenty of water/...<br>P317 Get medical help.<br>P362+P364 Take off contaminated clothing and wash it before reuse.<br>P333+P317 If skin irritation or rash occurs: Get medical help.<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>P318 IF exposed or concerned, get medical advice.<br>P319 Get medical help if you feel unwell.<br>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 |
|-----------------------------|-----------------------------|------------|-----------|---------------|
| 4-methyl-o-phenylenediamine | 4-methyl-o-phenylenediamine | 496-72-0   | 207-826-2 | 100%          |

## SECTION 4: First-aid measures

## **4.1 Description of necessary first-aid measures**

### **If inhaled**

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

### **Following skin contact**

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

### **Following eye contact**

Rinse with pure water for at least 15 minutes. Consult a doctor.

### **Following ingestion**

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

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

SYMPTOMS: Symptoms of exposure to this compound may include skin and eye irritation. ACUTE/CHRONIC HAZARDS: This compound may cause irritation of the skin and eyes. (NTP, 1992)

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

no data available

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## **SECTION 5: Fire-fighting measures**

### **5.1 Suitable extinguishing media**

If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Use "alcohol" foam, dry chemical or carbon dioxide. Apply water from as far a distance as possible. Keep run-off water out of sewers and water sources. 2,4-Toluenediamine

### **5.2 Specific hazards arising from the chemical**

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

### **5.3 Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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## **SECTION 6: Accidental release measures**

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

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **6.2 Environmental precautions**

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### **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 available 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

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

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

PRECAUTIONS FOR "CARCINOGENS": Storage site should be as close as practical 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

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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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

#### Thermal hazards

no data available

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

#### Physical state

3,4-diaminotoluene is a colorless to brownish purple crystalline

|   |   |
|---|---|
|   | solid. Toxic by ingestion and inhalation and an irritant to skin and eyes. Soluble in water, alcohol and ether. Decomposes to emit toxic oxides of nitrogen when heated to high temperature. Used in making dyes. |
| <b>Colour</b>   | LEAFLETS FROM PETROLEUM ETHER   |
| <b>Odour</b>  | no data available   |
| <b>Melting point/freezing point</b>                             | 228°C(dec.)(lit.)   |
| <b>Boiling point or initial boiling point and boiling range</b> | 155-156°C/18mmHg(lit.)  |
| <b>Flammability</b>   | no data available   |
| <b>Lower and upper explosion limit/flammability limit</b>       | no data available   |
| <b>Flash point</b>  | 87°C(lit.)  |
| <b>Auto-ignition temperature</b>                                | no data available   |
| <b>Decomposition temperature</b>                                | no data available   |
| <b>pH</b>   | no data available   |
| <b>Kinematic viscosity</b>                                      | no data available   |
| <b>Solubility</b>   | less than 1 mg/mL at 63° F (NTP, 1992)  |
| <b>Partition coefficient n-octanol/water</b>                    | no data available   |
| <b>Vapour pressure</b>  | 0.0179mmHg at 25°C  |
| <b>Density and/or relative density</b>                          | no data available   |
| <b>Relative vapour density</b>                                  | no data available   |
| <b>Particle characteristics</b>                                 | no data available   |

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

3,4-DIAMINOTOLUENE neutralizes acids in exothermic reactions to form salts plus water. May be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. Flammable gaseous hydrogen may be generated in combination with strong reducing agents, such as hydrides.

### 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 very toxic fumes of /nitrogen oxides/.

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## 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**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**

no data available

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

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

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

IMDG:  
ENVIRONMENTALLY  
HAZARDOUS  
SUBSTANCE, SOLID,  
N.O.S. (For reference only,  
please check.)

IATA:  
ENVIRONMENTALLY  
HAZARDOUS  
SUBSTANCE, SOLID,  
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

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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   |
|--|-----------------------------|------------|-------------|
| 4-methyl-o-phenylenediamine  | 4-methyl-o-phenylenediamine | 496-72-0   | 207-826-2   |
| 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.     |

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## 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/>

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

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