

# SAFETY DATA SHEET

## 1. IDENTIFICATION

**Product name:** 1,3-Phenylenediamine  
**Product code:** P1911  
**Company:** MIT-IVY INDUSTRY CO., LTD.  
  
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**Revision number:** 3

## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

### PHYSICAL HAZARDS

Not classified

### HEALTH HAZARDS

Acute toxicity (Oral)	Category 3
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation)	Category 3
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1A
Germ cell mutagenicity	Category 2
Specific target organ toxicity - Single exposure [Category 1]	Blood Central nervous system
Specific target organ toxicity - Repeated exposure [Category 1]	Urinary Badder
Specific target organ toxicity - Repeated exposure [Category 2]	Blood system Heart Kidney Muscle

### ENVIRONMENTAL HAZARDS

Acute aquatic hazard	Category 1
Long-term aquatic hazard	Category 1

### Label elements

#### Pictograms or hazard symbols



#### Signal word

Danger

#### Hazard statements

Toxic if swallowed, in contact with skin or if inhaled  
 Causes serious eye irritation  
 May cause an allergic skin reaction  
 Suspected of causing genetic defects  
 Causes damage to organs : Blood Central nervous system  
 Causes damage to organs through prolonged or repeated exposure : Urinary Badder  
 May cause damage to organs through prolonged or repeated exposure : Blood system Heart Kidney Muscle  
 Very toxic to aquatic life  
 Very toxic to aquatic life with long lasting effects

#### Precautionary statements

**[Prevention]**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust, fume, mist, vapors or spray.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

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

Contaminated work clothing should not be allowed out of the workplace.

Wash hands and face thoroughly after handling.

Wear protective gloves, protective clothing, face protection.

**[Response]**

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth.

IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

If exposed or concerned: Call a POISON CENTER or doctor.

Collect spillage.

**[Storage]**

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

**[Disposal]**

Dispose of contents and container in accordance with local, regional, national regulations.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Substance/mixture:</b>	Substance
<b>Components:</b>	1,3-Phenylenediamine
<b>Percent:</b>	>98.0%(GC)(T)
<b>CAS RN:</b>	108-45-2
<b>Synonyms:</b>	1,3-Diaminobenzene
<b>Chemical Formula:</b>	C <sub>6</sub> H <sub>8</sub> N <sub>2</sub>

**4. FIRST AID MEASURES**

<b>Inhalation:</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
<b>Skin contact:</b>	Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Call a POISON CENTER or doctor/physician.
<b>Eye contact:</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Call a POISON CENTER or doctor/physician.
<b>Ingestion:</b>	Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
<b>Protection of first-aiders:</b>	A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable extinguishing media:</b>	Dry chemical, foam, water spray, carbon dioxide.
<b>Specific hazards arising from the chemical:</b>	Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
<b>Precautions for firefighters:</b>	Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Remove movable containers if safe to do so.
<b>Special protective equipment for firefighters:</b>	When extinguishing fire, be sure to wear personal protective equipment

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures:</b>	Use personal protective equipment. Keep people away from and upwind of spill/leak. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
<b>Environmental precautions:</b>	Be careful not to let it flow into rivers, etc., since adverse effects on the environment are concerned.
<b>Methods and materials for containment and cleaning up:</b>	Sweep dust to collect it into an airtight container, taking care not to disperse it. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Technical measures:</b>	Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent dispersion of dust. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a local exhaust if dust or aerosol will be generated.
<b>Advice on safe handling:</b>	Avoid all contact!

### Conditions for safe storage, including any incompatibilities

<b>Storage conditions:</b>	Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store under inert gas. Store locked up. Store away from incompatible materials such as oxidizing agents. Light-sensitive, Air-sensitive
<b>Packaging material:</b>	Comply with laws.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Engineering controls:</b>	Install a closed system or local exhaust. Also install safety shower and eye bath.
<b>Exposure limits:</b>	
<b>ACGIH TLV(TWA):</b>	0.1 mg/m <sup>3</sup>
<b>Personal protective equipment</b>	
<b>Respiratory protection:</b>	Dust respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.
<b>Hand protection:</b>	Impervious gloves.
<b>Eye protection:</b>	Safety goggles. A face-shield, if the situation requires.
<b>Skin and body protection:</b>	Impervious protective clothing. Protective boots, if the situation requires.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state (20°C):</b>	Solid
<b>Form:</b>	Crystal - Powder
<b>Colour:</b>	White - Almost white
<b>Odour:</b>	No data available
<b>pH:</b>	No data available
<b>Melting point/freezing point:</b>	65°C
<b>Boiling point/range:</b>	287°C
<b>Flash point:</b>	No data available
<b>Flammability or explosive limits:</b>	
<b>Lower:</b>	No data available
<b>Upper:</b>	No data available
<b>Vapour pressure:</b>	0.13kPa/100°C
<b>Vapour density:</b>	3.7
<b>Relative density:</b>	No data available
<b>Solubility(ies):</b>	
<b>[Water]</b>	No data available
<b>[Other solvents]</b>	
<b>Soluble:</b>	Methanol
<b>Log Pow:</b>	-0.33
<b>Kinematic viscosity:</b>	4.69mm <sup>2</sup> /s (90°C)

**10. STABILITY AND REACTIVITY**

<b>Chemical stability:</b>	Stable under proper conditions.
<b>Possibility of hazardous reactions:</b>	No special reactivity has been reported.
<b>Incompatible materials:</b>	Oxidizing agents, Acid chlorides, Acid anhydrides, Chloroformates
<b>Hazardous decomposition products:</b>	Carbon monoxide, Carbon dioxide, Nitrogen oxides (NOx)

**11. TOXICOLOGICAL INFORMATION**

<b>Acute Toxicity:</b>	ori-rat LD50:280 mg/kg skn-rbt LDLo:1500 mg/kg ipr-rat LD50:283 mg/kg scu-mus LD50:90 mg/kg
<b>Skin corrosion/irritation:</b>	No data available
<b>Serious eye damage/irritation:</b>	eye-rbt 100 uL SEV
<b>Germ cell mutagenicity:</b>	mmo-sat 10 ug/plate (-S9) mmo-sat 250 ug/plate (+S9) bfa-rat-sat 240 mg/kg cyt-ham-Ing 12 mg/L
<b>Carcinogenicity:</b>	scu-rat TDLo:1485 mg/kg/47W-I
<b>IARC =</b>	Group 3 (Not classifiable as carcinogenic to humans)
<b>NTP =</b>	No data available
<b>Reproductive toxicity:</b>	ipr-rat TDLo:375 mg/kg (30D male) ori-rat TDLo:900 mg/kg (6- 15D preg)
<b>RTECS Number:</b>	SS7700000

**12. ECOLOGICAL INFORMATION**

<b>Ecotoxicity:</b>	
<b>Fish:</b>	48h LC50:>500 ppm (Oryzias latipes) 96h LC50:>100 mg/L (Oryzias latipes)
<b>Crustacea:</b>	48h EC50:2.0 mg/L (Daphnia magna) 21d NOEC:0.05 mg/L (Daphnia magna)
<b>Algae:</b>	72h EC50:18 mg/L (Selenastrum capricornutum)
<b>Persistence / degradability:</b>	2 % (by BOD) , 0 % (by HPLC) , 0 % (by TOC)
<b>Bioaccumulative potential(BCF):</b>	1.3 - 4.6 (conc. 2 ppm) , 1.6 - 24 (conc. 0.2 ppm)
<b>Mobility in soil</b>	
<b>Log Pow:</b>	-0.33
<b>Soil adsorption (Koc):</b>	16
<b>Henry's Law (PaM<sup>3</sup>/mol):</b>	1.3 x 10 <sup>-4</sup>

**13. DISPOSAL CONSIDERATIONS**

Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

**14. TRANSPORT INFORMATION**

<b>Hazards Class:</b>	6.1: Toxic substance.
<b>UN-No:</b>	1673
<b>Proper shipping name:</b>	Phenylenediamines
<b>Packing group:</b>	III
<b>Marine pollutant</b>	Y

**15. REGULATORY INFORMATION**

**Regulations on the Control over Safety of Dangerous Chemicals (State Council announces on January 26, 2002 and revised on February 16,2011):** Safe use and production, the storage of a dangerous chemical, transport, loading and unloading were prescribed.

**This product is included in the list of dangerous chemicals(2015)/Serial No.:** 54

**16. OTHER INFORMATION****The reference company name of written contents****Company:**

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This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.

The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.