

<p>p-PHENYLENE DIAMINE CAS NO 106-50-3</p>	<p>MATERIAL SAFETY DATA SHEET SDS/MSDS</p>
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : p-Phenylene Diamine

CAS-No. : 106-50-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi -110002
INDIA

Telephone : +91 11 49404040

Email : care@cdhfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

- Acute toxicity, Oral (Category 3), H301
- Acute toxicity, Inhalation (Category 3), H331
- Acute toxicity, Dermal (Category 3), H311
- Eye irritation (Category 2), H319
- Skin sensitisation (Category 1), H317
- Specific target organ toxicity - single exposure, Oral (Category 1), Kidney, Heart, Musculo-skeletal system, H370
- Acute aquatic toxicity (Category 1), H400
- Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H301 + H311 + H331 H317 H319 H370	Toxic if swallowed, in contact with skin or if inhaled May cause an allergic skin reaction. Causes serious eye irritation. Causes damage to organs (Kidney, Heart, Musculo-skeletal system) if swallowed.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311	Call a POISON CENTER /doctor.

Supplemental Hazard Statements none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : 1,4-Diaminobenzene
1,4-Benzenediamine
1,4-Phenylenediamine

Formula : C₆H₄(NH₂)₂
Molecular weight : 108.14 g/mol
CAS-No. : 106-50-3
EC-No. : 203-404-7
Index-No. : 612-028-00-6

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
p-Phenylenediamine			
CAS-No.	106-50-3	Acute Tox. 3; Eye Irrit. 2; Skin	<= 100 %
EC-No.	203-404-7	Sens. 1; STOT SE 1; Aquatic	
Index-No.	612-028-00-6	Acute 1; Aquatic Chronic 1;	
		H301, H331, H311, H319, H317, H370, H400, H410 M-Factor - Aquatic Acute: 1 - Aquatic Chronic: 10	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****8.2 Exposure controls**

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|---|
| a) Appearance | Form: flakes |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | 9 at 50 g/l at 20 °C |
| e) Melting point/freezing point | Melting point/range: 138 - 143 °C - lit. |
| f) Initial boiling point and boiling range | 267 °C - lit. |
| g) Flash point | 110 °C - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | The product is not flammable. - Flammability (solids) |
| j) Upper/lower flammability or explosive limits | Lower explosion limit: 1.5 %(V) |
| k) Vapour pressure | 1.08 mmHg at 100 °C |
| l) Vapour density | No data available |
| m) Relative density | 0.726 g/cm ³ at 22 °C |
| n) Water solubility | 31 g/l at 20 °C - OECD Test Guideline 105 - soluble |
| o) Partition coefficient: n-octanol/water | log Pow: -0.838 at 21 °C |
| p) Auto-ignition temperature | No data available |
| q) Decomposition temperature | No data available |

- r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information

- Bulk density 0.600 g/l
Surface tension 80 mN/m at 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

acids, Acid chlorides, Acid anhydrides, Chloroformates, Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 80 mg/kg(p-Phenylenediamine)
LC50 Inhalation - Rat - male - 4 h - 0.92 mg/l(p-Phenylenediamine)
(OECD Test Guideline 403)
Dermal: No data available(p-Phenylenediamine)
No data available(p-Phenylenediamine)

Skin corrosion/irritation

Skin - Rabbit(p-Phenylenediamine)
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit(p-Phenylenediamine)
Result: Irritating to eyes.
(OECD Test Guideline 405)

Respiratory or skin sensitisation

in vivo assay - Mouse(p-Phenylenediamine)
Result: May cause sensitisation by skin contact.
(OECD Test Guideline 429)

Germ cell mutagenicity

Rat(p-Phenylenediamine)
Embryo
Morphological transformation.
Hamster(p-Phenylenediamine)
ovary
Cytogenetic analysis
OECD Test Guideline 474(p-Phenylenediamine)
Rat - male and female
Result: negative

Carcinogenicity

This product is or contains a component that is not classifiable as to its classification.(p-Phenylenediamine)
(p-Phenylenediamine)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (p-Phenylenediamine)

Reproductive toxicity

No data available(p-Phenylenediamine)

Specific target organ toxicity - single exposure

No data available(p-Phenylenediamine)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available(p-Phenylenediamine)

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 16 mg/kg(p-Phenylenediamine)

RTECS: SS8050000

Absorption into the body leads to the formation of methemoglobin which in delayed 2 to 4 hours or longer., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(p-Phenylenediamine)

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 3.9 mg/l - 96 h(p-Phenylenediamine) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	semi-static test EC50 - Daphnia magna (Water flea) - 0.33 mg/l - 48 h(p-Phenylenediamine) (OECD Test Guideline 202)
Toxicity to algae	static test EC50 - Pseudokirchneriella subcapitata - 0.27 mg/l - 72 h(p-Phenylenediamine) (OECD Test Guideline 201)
Toxicity to bacteria	Respiration inhibition EC50 - Sludge Treatment - 13.4 mg/l - 3 h(p-Phenylenediamine) (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d(p-Phenylenediamine)
Result: 30 % - Not readily biodegradable.
(OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available(p-Phenylenediamine)

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Very toxic to aquatic life with long lasting effects.

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1673

IMDG: 1673

IATA: 1673

14.2 UN proper shipping name

ADR/RID: PHENYLENEDIAMINES

IMDG: PHENYLENEDIAMINES

IATA: Phenylenediamines

14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H301	Toxic if swallowed.
H301 + H311 +	Toxic if swallowed, in contact with skin or if inhaled
H331	
H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H370	Causes damage to organs (/\$/*_ORG_SING_ORAL/\$/) if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Further information

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. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.