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| Diphenylamine CAS No 122-39-4 | MATERIAL SAFETY DATA SHEET SDS/MSDS |
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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : **Diphenylamine**

CAS-No. : 122-39-4

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
 Ansari Road Daryaganj
 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]

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

- Acute toxicity, Inhalation (Category 3)
- Acute toxicity, Dermal (Category 3)
- Acute toxicity, Oral (Category 3)
- Specific target organ toxicity - repeated exposure (Category 2)
- Acute aquatic toxicity (Category 1)
- Chronic aquatic toxicity (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Danger of cumulative effects. Toxic by inhalation, in contact with skin and if swallowed.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



| | |
|---------------------|--|
| Signal word | Danger |
| Hazard statement(s) | |
| H301 | Toxic if swallowed. |
| H311 | Toxic in contact with skin. |
| H331 | Toxic if inhaled. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H410 | Very toxic to aquatic life with long lasting effects. |

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|--------------------------------|--|
| Precautionary statement(s) | |
| P261 | Avoid breathing 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 or doctor/ physician. |
| P311 | Call a POISON CENTER or doctor/ physician. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |
| Supplemental Hazard Statements | none |

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)



| | |
|-------------|--|
| R-phrase(s) | |
| R23/24/25 | Toxic by inhalation, in contact with skin and if swallowed. |
| R33 | Danger of cumulative effects. |
| R50/53 | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

| | |
|-------------|---|
| S-phrase(s) | |
| S28 | After contact with skin, wash immediately with plenty of soap and water. |
| S36/37 | Wear suitable protective clothing and gloves. |
| S45 | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |
| S60 | This material and its container must be disposed of as hazardous waste. |
| S61 | Avoid release to the environment. Refer to special instructions/ Safety data sheets. |

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| | | |
|------------------|---|-----------------------------------|
| Formula | : | C ₁₂ H ₁₁ N |
| Molecular Weight | : | 169,22 g/mol |

| Component | | Concentration |
|----------------------|--------------|---------------|
| Diphenylamine | | |
| CAS-No. | 122-39-4 | - |
| EC-No. | 204-539-4 | |
| Index-No. | 612-026-00-5 | |

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

Flush eyes with water as a precaution.

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**
Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Nausea, Vomiting, Liver injury may occur., Kidney injury may occur.
- 4.3 Indication of any immediate medical attention and special treatment needed**
no data available
- 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 (NOx)
- 5.3 Advice for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.
- 5.4 Further information**
no data available
- 6. ACCIDENTAL RELEASE MEASURES**
- 6.1 Personal precautions, protective equipment and emergency procedures**
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
- 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.
- 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.
- 7.2 Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
- 7.3 Specific end use(s)**
no data available
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
- 8.1 Control parameters**
Components with workplace 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 a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|---|-------------------------------------|
| a) Appearance | Form: crystalline Colour: white |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | Melting point/range: 52,5 - 54,0 °C |
| f) Initial boiling point and boiling range | 302 °C - lit. |
| g) Flash point | 153 °C - closed cup |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | 1 hPa at 108 °C |
| l) Vapour density | no data available |
| m) Relative density | 1,160 g/cm ³ |
| n) Water solubility | insoluble |
| o) Partition coefficient: n-octanol/water | log Pow: 3,5 |
| 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 | 0,61 g/l |
| Surface tension | 39,3 mN/m at 60 °C |

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents, Strong acids

10.6 Hazardous decomposition products

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 1.120 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Respiratory disorder

Blood:Methemoglobinemia-Carboxyhemoglobin.

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Developmental Toxicity - rat - Oral

Specific Developmental Abnormalities: Urogenital system.

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

no data available

Potential health effects

Inhalation

May be fatal if inhaled. May cause respiratory tract irritation.

Ingestion

Harmful if swallowed.

Skin

Toxic if absorbed through skin. May cause skin irritation.

Eyes

May cause eye irritation.

Signs and Symptoms of Exposure

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Nausea, Vomiting, Liver injury may occur., Kidney injury may occur.

Additional Information

RTECS: JJ7800000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 3,79 mg/l - 96,0 h

LC0 - Leuciscus idus (Golden orfe) - 20 mg/l - 48,0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0,27 - 0,36 mg/l - 48 h

Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 0,048 mg/l - 72 h

IC50 - Desmodesmus subspicatus (green algae) - 1,5 mg/l - 72 h

12.2 Persistence and degradability

Biodegradability Result: - According to the results of tests of biodegradability this product is not readily biodegradable.

no data available

12.3 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) -
Bioconcentration factor (BCF): 253

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

Very toxic to aquatic life.

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 chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3077

IMDG: 3077

IATA: 3077

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Diphenylamine)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Diphenylamine)

IATA: Environmentally hazardous substance, solid, n.o.s. (Diphenylamine)

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: yes

IMDG Marine Pollutant: yes

IATA: yes

14.6 Special precautions for user

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

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

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

no data available

15.2 Chemical Safety Assessment

no data available

16. OTHER INFORMATION

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.