1. Identification of the substances/mixture and of the company/undertaking

1.1 Product Identifiers
Product Code RM1440
Product Name 3,3’-Diaminobenzidine tetrahydrochloride, A.R.

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Produced by HiMedia Laboratories Pvt. Ltd.
Address 23, Vadhani Indl.Estate, LBS Marg, Mumbai 400 086, India.
Tel. No. +91-22-2500 0970, +91-22-2500 1607
Fax No. +91-22-2500 2468

1.4 Emergency Tel. No.
Emergency Tel.No. Please contact the regional HiMedia representation in your country

2. Hazards Identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Acute toxicity, oral (Category 4)
Serious eye damage/eye irritation (Category 2A)
Germ cell mutagenicity (Category 2)
Carcinogenicity (Category 1A, 1B)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
May cause cancer.
Possible risk of irreversible effects.

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008 [CLP]
Pictogram

Signal word Danger

Hazard Statement(s)
H302 Harmful if swallowed
H319 Causes serious eye irritation
H341 Suspected of causing genetic defects
H350 May cause cancer

Precautionary Statement(s)
P201 Obtain special instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P337 + P313 IF eye irritation persists: Get medical advice/attention.

Symbol(s)

R-Phrase(s)
R45 May cause cancer.
R68 Possible risk of irreversible effects.

S-Phrase(s)
S53 Avoid exposure - obtain special instructions before use.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards - None

3. Composition/Information on Ingredients
3.1 Substances
Synonym: 3,3’,4,4’-Biphenyltetramine tetrahydrochloride; DAB

Molecular Formula: \( \text{C}_{12}\text{H}_{14}\text{N}_4\cdot4\text{H}_2\text{O} \)
Molecular Weight: 360.11

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,3’-Diaminobenzidine tetrahydrochloride, A.R.</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7411-49-6</td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-018-9</td>
</tr>
</tbody>
</table>

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. 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
No data available

4.3 Indication of immediate medical attention and special treatment needed
No data available

5. Fire Fighting 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), Hydrogen chloride gas

5.3 Precautions for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.
6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. 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 inhalation of vapour or mist. Normal measures for preventive fire protection.

7.3 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended Storage Temperature : Store at 2 - 8°C

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

Hygiene measure
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands face after working with the substance

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). 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.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

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 work place.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK(EN 14387) respirator cartridges as a backup to the 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).

Environment exposure controls
Do not empty into drains
9 Physical and chemical properties
9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White to brown or grey or purple crystals or powder or solid</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
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<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting/freezing point</td>
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</tr>
<tr>
<td>Initial boiling point and boiling range</td>
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</tr>
<tr>
<td>Flash point</td>
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</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
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</tr>
<tr>
<td>Vapour pressure</td>
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</tr>
<tr>
<td>Vapour density</td>
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</tr>
<tr>
<td>Relative density</td>
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</tr>
<tr>
<td>Water Solubility</td>
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</tr>
<tr>
<td>Partition coefficient: n-octanol/Water</td>
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</tr>
<tr>
<td>Autoignition Temperature</td>
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</tr>
<tr>
<td>Decomposition Temperature</td>
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<tr>
<td>Viscosity</td>
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</tr>
<tr>
<td>Explosive properties</td>
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</tr>
<tr>
<td>Oxidizing properties</td>
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</tr>
</tbody>
</table>

9.2 Other safety information
No data available

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

10.6 Hazardous decomposition products
Other decomposition products - No data available

11 Toxicological Information
11.1 Information on toxicological effects

Acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
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
No data available

Specific target organ toxicity- single exposure
No data available

Aspiration hazard
No data available
Potential Health Effects

Inhalation.
Refer Section 2

Skin
Refer Section 2

Eyes
Refer Section 2

Ingestion
Refer Section 2

Additional Information
RTECS : DV8753000

12 Ecological Information

12.1 Toxicity

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 PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

13 Disposal Considerations

13.1 Waste treatments methods

Product
Offer surplus and non-recyclable solutions to a licenced disposal company. Contact a licenced professional waste disposal service to dispose of this material.

13.2 Contaminated packaging

Dispose of as unused product.

14 Transport Information

14.1 UN-No.

ADR/RID: -    IMDG: -    IATA: -

14.2 UN proper shipping name

ADR/RID : no dangerous goods
IMDG : no dangerous goods
IATA : no dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -    IMDG: -    IATA: -

14.4 Packaging group

ADR/RID: -    IMDG: -    IATA: -

14.5 Environmental hazards

ADR/RID: No    IMDG: Marine Pollutant:No    IATA: No

14.6 Special precautions for use

No data available

15 Regulatory Information

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

15.1 Safety health and environment regulations/legislation specific for the substance or mixture
15.2 Chemical Safety Assessment
No data available

16 Other Information
Further information
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