MATERIAL SAFETY DATA SHEET

CHEMTREC 24-HOUR EMERGENCY RESPONSE
TOLL FREE NUMBER: (800) 424-9300
INTERNATIONAL CALLS: COLLECT (202) 483-7616
CHEMTREC should only be contacted in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals.

1. PRODUCT IDENTIFICATION
(Produced in China)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Synonym</th>
<th>CAS Number</th>
<th>EINECS NO.</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosin Amine</td>
<td>Rosin Amine D, Rosin Amine</td>
<td>61790-47-4</td>
<td>215-899-7</td>
<td>Varied applications</td>
</tr>
<tr>
<td>Dehydroabietylamine, Technical</td>
<td></td>
<td></td>
<td>263-139-8</td>
<td></td>
</tr>
</tbody>
</table>

Molecular Formula: C_{20}H_{31}N

Molecular Weight: 285

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>%</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehydroabietylamine</td>
<td>~55</td>
<td>1446-61-3</td>
</tr>
<tr>
<td>Dehydroabietylamine &amp; tetrahydroabietylamine</td>
<td>~30</td>
<td>unknown</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Hazards listed: No physical / chemical, environmental or human hazards are reported or known. There is no set Threshold Limit Value (TLV). Vapors emitted when the product is heated can cause respiratory problems. Fumes, at high temperatures, can have an irritant effect on eyes.

Target organs:
- None
- Chronic: Effects may be delayed.

4. FIRST AID MEASURES OR PROCEDURES

Skin Contact: Wash area with copious amounts of soap & water.

Eye Contact: Remove contact lenses at once. Flush eyes well with large quantities of water at least 15 minutes. See a physician immediately.

Accidental Ingestion: DO NOT induce vomiting. Any further treatment based on judgement of the physician in response to reactions of the patient. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: If symptoms of overexposure are experienced, evacuate to fresh air. If breathing is difficult, give oxygen. If symptoms persist, seek medical attention.

5. FIRE & EXPLOSION HAZARD DATA

NFPA Codes (HMIS Rating):
- Health: 3
- Flammability: 1
- Reactivity: 0
- Protection: 1

(Degree of Hazard:
- 4=Extreme
- 3=High
- 2=Moderate
- 1=Slight
- 0=Insignificant)

Flash Point: 110°C (230°F) (P-M CC)

Extinguishing Media:
- Water Fog/Spray, Regular Foam, CO₂, Dry Chemical (Class B)

Unsuitable extinguishing media:
- Unknown

Hazardous thermal decomposition products: Unknown

Flammable Limits (% by volume):
- Not Available

Special Fire Fighting Procedures and Equipment: As with any fire situation, full face, self-contained breathing apparatus & appropriate clothing should be worn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use proper protective equipment such as apron, safety glasses & suitable gloves. Clean up spills immediately. Sweep & absorb material, then place into a suitable clean, dry, closed container for disposal. Provide ventilation.
7. HANDLING AND STORAGE
Store in sealed containers to preserve quality. Store in closed containers in a cool, dry, well-ventilated area away from incompatible substances.

Inventory Control: Use oldest material first.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Carcinogenicity: No  NTP: N/A  OSHA: N/A  IARC: N/A

Signs and Symptoms of Acute and Chronic Exposure: Not toxic. Breathing heavy concentrations of fumes should be avoided. Respirators are indicated for prolonged contact with heavy fume concentrations.

Personal Protection: OSHA-approved apron, safety glasses with side shields, and suitable gloves (Neoprene or Rubber).

Work/Hygienic Practices: Good personal hygiene practices should be used. Wash after any contact, before eating, and at the end of the work period.

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical state: | Liquid | Color: Colorless to Pale Yellow |
| Boiling point (100 mm Hg): | <199°C (390°F) | Odor: Resinous odor/Ammonia |
| Gardner Color: | 7.5 ( Typical ) | pH: NE (Alkaline) |

Vapor Density: NA  Solubility in Water: Slight
Evaporation rate: NA

10. STABILITY AND REACTIVITY DATA

Stability: Stable under ordinary conditions of use & storage.
Conditions to avoid: Incompatible Materials, excess heat, strong oxidants.
Materials to avoid: Avoid contact with strong oxidizing compounds.

Hazardous Decomposition Products: Thermal degradation produces carbon oxides, irritating and toxic fumes and gases.

Hazardous Polymerization: Has not been reported.

11. TOXICOLOGICAL INFORMATION

No values of long term or chronic toxicity are available. Inhalation studies with rats submitted to decomposition fumes of this kind indicate low toxicity.

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL CONSIDERATIONS
Dispose of in accordance with Federal, State and Local environmental regulations. This product does not constitute a hazardous waste problem. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. RCRA P-Series: None listed. RCRA U-Series: None listed.
14. TRANSPORT INFORMATION

DOT Proper Shipping Name: Amines, Liquid, Corrosive, n.o.s. (Dehydroabietylamine/rosin amine) // UN2735
PG III
Hazard Class: Corrosive, Sensitizer
UN Number: UN 2735 Packing Group: III
IMO Shipping Data: Amines, Liquid, Corrosive, n.o.s. (Dehydroabietylamine/rosin amine) // UN2735 // PG III
Hazmat stcc+4935601 // EMS No. 8-05 // MFAG No. 320
ICAO/IATA Shipping Data: Amines, Liquid, Corrosive, n.o.s. (Dehydroabietylamine/rosin amine) // UN2735
PG III // Shipment per 49 CFR 171.11

15. REGULATORY INFORMATION

The following environmental and regulatory data are provided to assist users of this product in defining their
regulatory environmental compliance obligations. Most rosins are biologically inert & have a low order of
toxicity. The extended use of these materials in printed inks has produced no ill effects from oral or dermal
toxicity.

SARA TITLE III (See footnotes):

<table>
<thead>
<tr>
<th>SEC. 304 EHS RQ (lbs)</th>
<th>SEC. 302 EHS TPQ (lbs)</th>
<th>SEC. 312 Hazard Category</th>
<th>SEC. 313 Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>IMMEDIATE HEALTH HAZARD</td>
<td>NONE</td>
</tr>
</tbody>
</table>

CERCLA (40 CFR 302.4 HAZARDOUS SUBSTANCE & REPORTABLE QUANTITIES):
This product does NOT contain any hazardous substances listed in 40 CFR 302.4.

CALIFORNIA PROP. 65
Resins based on rosin-derived resins are NOT listed on California’s Prop. 65 toxic substance list.

RCRA INFORMATION:
This product is not listed in federal hazardous waste regulation 40 CFR 261.33, paragraph (e) or (f), i.e.,
chemical products that are considered hazardous if they become wastes. It does not exhibit any of the
hazardous characteristics listed in 40 CFR 261, Subpart C. State or local hazardous waste regulations may
apply if they are different from the federal regulation. This product is not biodegradable.

ODC STATUS/CLEAN AIR ACT/CLEAN WATER ACT:
The components of this product are NOT found to contain any ozone depleting compounds or hazardous air
pollutants. None of the chemicals in this product are listed as Hazardous Substances, Priority Pollutants or
Toxic Pollutants under the CWA.

TSCA STATUS:
The components of this product are included on the EPA TSCA Chemical Substance Inventory.

DSL STATUS:
The components of this product are included on Canada’s Domestic Substance List.

CANADIAN WHMIS:
This product has a WHMIS classification of D2B.

EUROPEAN REGULATIONS:
Safety Phrases: S23: Do not inhale gas/fumes/vapour/spray
S:28 After contact with skin, wash immediately with…

16. OTHER INFORMATION

The information contained herein is based on data considered to be accurate & reliable. No warranty is
expressed or implied regarding the accuracy or correctness of this data. It is the user's obligation to determine
the safe use of the product since conditions of use, handling, storage & disposal are beyond our control.