

## MATERIAL SAFETY DATA SHEET

### Chemical Product and Company Identification

- Product details: Rotundine
- Synonym: L-tetrahydropalmatine, Corydalis yanhusuo P.E.
- Plant Source: Corydalis yanhusuo W. T. Wang
- Manufacturer/Supplier: SHAANXI YOUGU BIOTECHNOLOGY CO., LTD

### Composition/Data on components

- Chemical Name: Rotundine
- CAS#: 10097-84-4
- Purity: ≥98%
- Formula:  $C_{21}H_{25}NO_4$
- Molecular Weight: 355.42
- Dangerous components: No

### Hazards identification

- Potential Health Effects  
The toxicological properties of this material have not been investigated. Use appropriate procedures to prevent opportunities for direct contact with the skin or eyes and to prevent inhalation. Compound is Nonhazardous, Non-Toxic / Non-Flammable.

### First aid measures

- General information: No Special Measures Required.
- After inhalation: Remove from exposure and move to fresh air immediately. Consult a doctor.
- After skin contact: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Consult a doctor.
- After eye contact: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Consult a doctor.
- After Ingestion: Do NOT induce vomiting. If conscious and alert rinse mouth and drink 2-4 cupfuls of milk or water. Consult a doctor.
- Indication of immediate medical attention and special treatment needed: Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

### Fire fighting measures

- General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
- Extinguishing Media: In case of fire, use water spray, dry chemical, chemical foam, carbon dioxide or alcohol-resistant foam.
- Special hazards arising from the substance or mixture: In combustion, may emit toxic fumes.

**Accidental release measures**

- Personal precautions, protective equipment and emergency procedures: Avoid dust formation. Avoid breathing vapors, mist or gas.
- Environmental precautions: Do not let product enter drains.
- General Information: Use proper personal protective equipment as indicated in Section "EXPOSURE CONTROLS, PERSONAL PROTECTION"
- Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete.

**Handling and storage**

- Information for safe handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Keep away from sources of ignition. Avoid prolonged or repeated exposure.
- Storage: Store in a well closed container. Protected from air and light, refrigerate or freeze.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- Storage class: No special requirement.
- Specific end uses: Use in a laboratory fume hood where possible. Refer to employer is COSHH risk assessment.

**Exposure Controls, Personal Protection**

- Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.
- Personal Protective Equipment:
  - a) Eyes: Wear safety glasses and chemical goggles if splashing is possible.
  - b) Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.
  - c) Clothing: Wear appropriate protective clothing to minimize contact with skin.
  - d) Respirators: Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

**Physical and Chemical Properties**

- a) Appearance: Light yellow to white crystal
- b) Odour: no data available
- c) Odour Threshold: no data available
- d) pH: no data available
- e) Melting point/freezing point: no data available
- f) Initial boiling point and boiling range: no data available
- g) Flash point: no data available
- h) Evaporation rate: no data available
- i) Flammability (solid, gas): no data available

- j) Flammability or explosive limits: no data available
- k) Vapour pressure: no data available
- l) Vapour density: no data available
- m) Relative density: no data available
- n) Water solubility: no data available
- o) Partition coefficient: no data available
- p) Autoignition 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

**Stability and reactivity**

- Thermal decomposition / conditions to be avoided: Incompatible materials, strong oxidants, heat.
- Dangerous reactions: Stable under recommended transport or storage conditions.
- Dangerous products of decomposition: No dangerous decomposition products known.
- Chemical Stability: Stable under normal temperatures and pressures.
- Incompatibilities with Other Materials: Strong oxidising/reducing agents, strong acids/alkalis.
- Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.
- Hazardous Polymerization: Has not been reported.

**Toxicological information**

- 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 sensitization: no data available
- Germ cell mutagenicity: no data available
- Carcinogenicity IARC: No component of this product presented 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
- Specific target organ toxicity - repeated exposure: no data available
- Aspiration hazard no data available
- Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.
- Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
- Additional Information: RTECS No: Not available
- Exposure may cause irritation to eyes, mucous membranes, upper respiratory tract and skin.

**Ecological information**

- Toxicity: no data available
- Persistence and degradability: no data available
- Bioaccumulative potential: no data available
- Mobility in soil: no data available
- Results of PBT and vPvB assessment: no data available
- Other adverse effects: May be harmful to the aquatic environment.

**Disposal Considerations**

- Dispose of in a manner consistent with federal, state, and local regulations.

**Transport information**

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID and IATA

- UN number: Does not meet the criteria for classification as hazardous for transport.
- UN proper shipping name:  
ADR/RID: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods
- Transport hazard class (es): Does not meet the criteria for classification as hazardous for transport.
- Packaging group: Does not meet the criteria for classification as hazardous for transport.
- Environmental hazards: This product is not classified as environmentally hazardous according to the UN Model Regulations, nor a marine pollutant according to the IMDG Code
- Special precautions for user: no data available

**Regulatory Information**

- European/International Regulations  
European Labeling in Accordance with EC Directives  
Hazard Symbols:
- Risk Phrases: R 22 Harmful if swallowed.
- This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
- Safety, health and environmental regulations/legislation specific for the substance or mixture: no data available.
- Chemical Safety Assessment: no data available

**Other information**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.