¹ TCI (Shanghai) DEVELOPMENT CO., LTD.

Dipropyl 2,5-Pyridinedicarboxylate

Revision number: 1

Revision date: 12/01/2010

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SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: Product code: Company: Address: Responsible Department: Telephone: Fax: e-mail: Revision number: Dipropyl 2,5-Pyridinedicarboxylate P0835 TCI (Shanghai) DEVELOPMENT CO., LTD. No.96 Pu Gong Road, Shanghai Chemical Industry Park, Shanghai 201507 China Sales Department +86-(0)21-67121386 +86-(0)21-67121385 sales@tcishanghai.com.cn 1

2. HAZARDS IDENTIFICATION

Classification of the GHS PHYSICAL HAZARDS Not classified Not classified **HEALTH HAZARDS ENVIRONMENTAL HAZARDS** Not classified **GHS** label elements Pictograms or hazard symbols None Signal word No signal word Hazard statement None None **Precautionary statements**

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance/mixture: Component(s): | Substance Dipropyl 2,5-Pyridinedicarboxylate |
|-------------------------------------|---|
| Percent: | >98.0%(GC) |
| CAS Number: | 136-45-8 |
| Synonyms: | Dipropyl Isocinchomeronate, 2,5-Pyridinedicarboxylic Acid Dipropyl Ester, Isocinchomeronic Acid Dipropyl Ester |
| Chemical Formula: | C ₁₃ H ₁₇ NO ₄ |

4. FIRST AID MEASURES

| Inhalation: | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell. |
|-----------------------------|--|
| Skin contact: | Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention. |
| Eye contact: | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| Ingestion: | Get medical advice/attention if you feel unwell. Rinse mouth. |
| Protection of first-aiders: | A rescuer should wear personal protective equipment, such as rubber gloves and air- tight goggles. |

5. FIRE-FIGHTING MEASURES

| Suitable extinguishing media: | Dry chemical, foam, water spray, carbon dioxide. |
|--|---|
| Extinguishing media not to be used: | Solid streams of water |
| Specific hazards: | Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume. |

5. FIRE-FIGHTING MEASURES

| 5. FIRE-FIGHTING MEASURES Specific methods: Special protective | Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Remove movable containers if safe to do so. When extinguishing fire, be sure to wear personal protective equipment. |
|---|--|
| equipment for firefighters: | |
| 6. ACCIDENTAL RELEASE ME Personal precautions, protective equipment and emergency procedures: Environmental precautions Methods and materials for containment and cleaning up: | EASURES Use personal protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc. Prevent product from entering drains. Absorb spilled material in a suitable absorbent (e.g. rag, dry sand, earth, saw-dust). In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations. |
| 7. HANDLING AND STORAGE Handling | |
| Technical measures: Advice on safe handling: | Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapor or mist. Wash hands and face thoroughly after handling. Use a ventilation, local exhaust if vapor or aerosol will be generated. Avoid contact with skin, eyes and clothing. |
| Storage | , told contact with oran, cyce and clothing. |
| Storage conditions: | Keep container tightly closed. Store in a cool and dark place. Store away from incompatible materials such as oxidizing agents. |
| Packaging material: | Law is followed. |
| 8. EXPOSURE CONTROLS / PERSONAL PROTECTION Engineering controls: Install a closed system or local exhaust as possible so that workers should not be exposed directly. Also install safety shower and eye bath. Personal protective equipment | |
| Respiratory protection: | Vapor respirator. Follow local and national regulations. |
| Hand protection: | Protective gloves. |
| Eye protection: Skin and body protection: | Safety glasses. A face-shield, if the situation requires. Protective clothing. Protective boots, if the situation requires. |
| 9. PHYSICAL AND CHEMICAL | PROPERTIES |
| Physical state (20°C): | Liquid |
| Form: | clear |
| Color: Odor: | Very pale yellow - Yellow No data available |
| pH: | No data available |
| Melting point/freezing poin | |
| Boiling Point/Range: | 175 °C/0.7kPa |
| Flash Point: Explosive limits | No data available |
| Lower: | No data available |
| Upper: | No data available |
| Density: | 1.12 |
| Solubility: log Pow = | Insoluble in: Water 3.57 |
| 10. STABILITY AND REACTIVITY | |
| Stability: | Stable under proper conditions. |

| Stability: | Stable under proper conditions. |
|-------------|--|
| Reactivity: | No special reactivity has been reported. |

10. STABILITY AND REACTIVITY

Incompartible materials: oxidizing agents Hazardous Decomposition Carbon monoxide, Carbon dioxide, Nitrogen oxides (NOx) **Products:**

11. TOXICOLOGICAL INFORMATION

| Acute Toxicity: | orl-mus LD50:1600 mg/kg orl-rat LD50:5230 mg/kg |
|----------------------------|--|
| | skn-rat LD50:9400 mg/kg |
| | ipr-mus LD50:330 mg/kg |
| Skin corrosion/irritation: | No data available |
| Serious eye | No data available |
| damage/irritation: | |
| Germ cell mutagenicity: | No data available |
| Carcinogenicity: | |
| IARC = | No data available |
| NTP = | No data available |
| Reproductive toxicity: | No data available |
| RTECS Number: | US800000 |

12. ECOLOGICAL INFORMATION . . .

| Ecotoxicity: | |
|--------------------------------------|--|
| Fish: | 48h LC50:>1000 mg/L (Oryzias latipes) |
| Crustacea: | No data available |
| Algae: | No data available |
| Persistence / degradability: | 0 % (by BOD), 9 % (by HPLC), 1 % (by TOC) |
| Bioaccumulative | 0.3 - 0.9 (conc. 2 mg/L), 2.9 - 8.6 (conc. 0.2 mg/L) |
| potential(BCF): Mobillity in soil | |
| • | |
| log Pow: | 3.57 |
| Soil adsorption (Koc): | No data available |
| Henry's Law | No data available |
| constant(PaM ³ /mol): | |
| | |

13. DISPOSAL CONSIDERATIONS

Recycle to process, if possible. Consult your local regional authorities. You may be able to burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

14. TRANSPORT INFORMATION

Does not correspond to the classification standard of the United Nations Hazards Class: Not Listed

15. REGULATORY INFORMATION

Safe management ordinance of dangerous chemical product (State Council announces on January 26, 2002): Safe use and production, the storage of a dangerous chemical, transport, loading and unloading were prescribed.

16. OTHER INFORMATION

UN-No:

The reference company name of written contents

| Company: | TCI (Shanghai) DEVELOPMENT CO., LTD. |
|-------------|--|
| Address: | No.96 Pu Gong Road, Shanghai Chemical Industry Park, Shanghai 201507 China |
| Department: | R&D (Information Management) Department |
| Telephone: | +86-(0)21-67121388*461 |
| Fax: | +86-(0)21-67121385 |

16. OTHER INFORMATION

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.