MATERIAL SAFETY DATA SHEET

Introductory Details
Page 1 of total 6
Date of preparation: 31 March 2004
Date revised: 11 June 2008

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Isoprothiolane 40% EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Name</td>
<td>FUJIONE 40 EC / FUJIONE EC</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Diisopropyl 1,3-dithiolan-2-ylidenemalonate</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>C_{12}H_{18}O_{4}S_{2}</td>
</tr>
<tr>
<td>Molar Mass</td>
<td>290</td>
</tr>
<tr>
<td>Chemical Family</td>
<td>Organo-sulphur</td>
</tr>
<tr>
<td>Manufacturer's Code</td>
<td>-</td>
</tr>
<tr>
<td>Use</td>
<td>Fungicide</td>
</tr>
<tr>
<td>Structural Formula</td>
<td><img src="image" alt="Isoprothiolane" /></td>
</tr>
</tbody>
</table>

1.2 Company Identification

Manufacturer
Changzhou Good-Job Biochemical Co., Ltd
ADD.: No. 398, Middle Tongjiang Road, Xinbei District, Changzhou, Jiangsu, China
Tel.: +86 519 85153978
Fax.: +86 519 85153975
Email: sales@gjbiochem.com

1.3 Contact Point

Tel. No. : 0086 519 8515378
SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENT

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Proportion</th>
<th>Exposure Limit</th>
<th>Toxicity Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diisopropyl 1,3-dithiolan-2-ylidene malonate</td>
<td>50512-35-1</td>
<td>40%</td>
<td>Refer to Section 9</td>
<td>Refer to Section 11</td>
</tr>
<tr>
<td>Surfactant</td>
<td>-</td>
<td>5 - 15%</td>
<td>Refer to Section 9</td>
<td>Refer to Section 11</td>
</tr>
<tr>
<td>Solvent</td>
<td>-</td>
<td>Balance</td>
<td>Refer to Section 9</td>
<td>Refer to Section 11</td>
</tr>
</tbody>
</table>

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Yellow oily liquid
- Odour : Characteristic odour
- Solubility : Miscible with water
- Boiling Point : No data available
- Melting Point (technical) : 50 - 51°C
- Vapour Pressure (technical) : 1.41 x 10^-4 mmHg at 25°C
- Percentage Volatiles : No data available
- Evaporation Rate : No data available
- Vapour Density : No data available
- Specific Gravity : 1.00
- Flash Point : 40°C
- Autoignition temperature : No data available
- Flammable Limit (%) : No data available
- Partition coefficient (technical) : log P_o/w = 3.3

SECTION 4 : HAZARD IDENTIFICATION

Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes, respiratory system and skin.
Flammable.
Toxic to aquatic organisms.
SECTION 5 : FIRST AID MEASURES

Ingestion : If swallowed, give large quantity of water and induce vomiting. Carefully not to draw into lungs. Get prompt medical attention.

Eye contact : Flush with plenty of water for at least 15 minutes. If irritation persists, get medical attention.

Skin contact : Wash with plenty of water and soap. If irritation persists, get medical attention. Sensitized person should avoid further contact and reuse of contaminated clothing.

Inhalation : Remove patient to fresh air.

Notes to physician : 

Signs and Symptoms of Exposure :

Skin contact : Skin contact may cause skin irritation and allergic reaction. Repeated contact may cause allergic reaction in susceptible individuals.

Eye contact : Contact with this product may cause slight eye irritation. But, temporary injury.

Ingestion : Ingestion of large amount of this product may cause hypoactivity.

SECTION 6 : FIRE FIGHTING MEASURES

Extinguishing Media : Water spray (mist), foam, CO₂, dry chemical.

Fire fighting instruction : Fire fighters should wear full-faced self contained breathing apparatus and protective clothing.

Special hazards : No data available

SECTION 7 : ACCIDENTAL RELEASE MEASURE

Leak and/or Spill :

Wear protective clothing. Eliminate ignition source. Ventilate area. Absorb spills with inert material such as clay, sand, earth, sawdust etc. and collect in a drum. Cover up the contaminated area with household detergent and small amount of water. Brush the slurry and spread inert absorbents on the slurry liquid and collect the absorbed material in a drum. Seal drum and dispose of. Do not contaminate water resources.
SECTION 8 : HANDLING AND STORAGE

Handling : Protective clothing should be changed at least daily. Persons exposed routinely to the active material should shower prior to leaving work each day. Avoid handling near open flame, source of heat or source of ignition.

Storage : Keep in original container, tightly closed, out of reach of children. Keep away from food, drinks and animal feeding stuffs. Avoid direct sunlight and do not store near heat and flame. Read the label before use. Do not contaminate water. Open dumping is prohibited.

SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limit (Technical) :
- Japan Association of Industrial Health : 5 mg/m³
- Nihon Nohyaku exposure limit : 2 mg/m³

Engineering measures : Local exhaust ventilation
Personal protection : Wear pesticide respiratory masks, protective gloves and chemical safety goggles.

SECTION 10 : STABILITY AND REACTIVITY

Conditions to avoid : Direct sunlight, heat and extreme temperature
Incompatible : No data available
Decomposition Products : No data available
Hazardous polymerization : No data available
Stability : Stable for at least 3 years under normal warehouse conditions.

SECTION 11 : TOXICOLOGICAL INFORMATION

Toxicity Data :
- Acute Oral LD₅₀ : (Rat) male 2429 mg/kg
  female 2698 mg/kg
- Acute Dermal LD₅₀ : (Rat) male > 2000 mg/kg
  female > 2000 mg/kg
- Inhalation LD₅₀ (4h) : (Rat) male > 2.77 mg/l (isoprothiolane)
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Carcinogenicity : No data available
Reproductive Effect : No birth defects were noted in rats and rabbits given isoprothiolane orally during pregnancy. No effects were seen on the ability of male and female rats to reproduce when fed isoprothiolane for 2 successive generations.

Effects of overexposure : Eye Irritation : Slight irritating
Skin Irritating : Slight irritating
Sensitivity : Positive
Chronic effects : Rats fed isoprothiolane for 2 years showed only body weight depression. In dog 1 year study, dogs fed isoprothiolane (50 mg/kg/day) showed slight body weight depression and increase of alkaline phosphatase activity in plasma (male).
Target organs : Any clinical parameters showing organ toxicity were not observed.
Genetic effects : Isoprothiolane did not produce genetic changes in Rec-assay and Ames test.
Pharmacological effects : Isoprothiolane did not show any specific pharmacological effects.

Medical Conditions Generally Aggravated by Exposure : No data available

SECTION 12 : ECOLOGICAL INFORMATION (TECHNICAL)

Mobility & Bioaccumulation : No data available
Biodegradability : No data available
Fish Toxicity LC50 (48 hr) : (Carp) 6.7 mg/l
LC50 (3 hr) : (Daphnia) 40 mg/l

SECTION 13 : DISPOSAL INFORMATION

Dispose of according to local regulation.

SECTION 14 : TRANSPORT INFORMATION

Follow the precaution indicated in the storage and handling section. Follow all regulations in your country.
SECTION 15 : REGULATORY INFORMATION

Pesticides Act : Class III - Harmful

CPL Regulations : Class - Harmful

Risk Phrases : R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R10 Flammable.
R51 Toxic to aquatic organisms.

Safety Phrases : S2 Keep out of reach of children.
S13 Keep away from food, drink and animal feeding stuff.
S24/25 Avoid contact with skin and eyes.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

SECTION 16 : OTHER INFORMATION

Reference : (a) Material Safety Data Sheet - Fujione 40 EC
Date : 6-12-1996

(b) Nihon Nohyaku Material Data Sheet - FUJI-ONE 40 EC
MSDS number : 94017
Date of preparation : July 27, 1994

(c) Material Safety Data Sheet - Fujione Technical
Date : 2 January 2008

(d) Guidelines for The Classification of Hazardous Chemicals, DOSH 1997

(e) Guidelines for The Formulation of A Chemical Safety Data Sheet, DOSH 1997

(f) Guidelines for Labelling of Hazardous Chemicals, DOSH 1997

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.