

MATERIAL SAFETY DATA SHEET

Introductory Details

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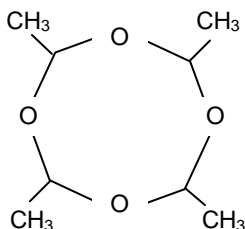
Date of preparation : 31 March 2004

Date revised : 12 June 2008

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

Product Name : Metaldehyde 5% extruded granule
Trade Name : SIPUTOX
Chemical Name : 2,4,6,8-tetramethyl-1,3,5,7-tetroxocane
Chemical Formula : $C_8H_{16}O_4$
Molar Mass : 176.21
Chemical Family : Polymer of acetaldehyde
Manufacturer's Code : -
Use : Molluscide
Structural Formula :



Metaldehyde

1.2 Company Identification

Manufacturer

Name and Address : Agricultural Chemical (M) Sdn. Bhd.
962, Lorong Perusahaan 8, Taman Perindustrian Perai,
13600 Perai, Pulau Pinang, Malaysia.
Telephone Number : 604-390 7988
Emergency Telephone Number : 604-390 7988

1.3 Contact Point

Designation : Ms. Cheong Wai Ching, Product Support Manager /
En. Ahmad Labib bin Yusof, Administrative Assistant
Tel. No. : 604-390 7988

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SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENT

Chemical Name	CAS No.	Proportion	Exposure Limit	Toxicity Data
2,4,6,8-tetramethyl-1,3,5,7-tetroxocane	108-62-3	5%	No data available	Refer to Section 11
Other ingredients	-	Balance		

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Light reddish-brown extruded granules
Odour	: Characteristic odour
Solubility	: Practically insoluble in water and common organic solvent
Boiling Point	: No data available
Melting Point	: No data available
Vapour Pressure	: No data available
Percentage Volatiles	: No data available
Evaporation Rate	: No data available
Vapour Density	: No data available
Specific Gravity	: No data available
Flash Point	: No data available
Autoignition Temperature	: No data available

SECTION 4 : HAZARD IDENTIFICATION

No significant hazard under CPL regulations.

SECTION 5 : FIRST AID MEASURES

Ingestion	: Get medical attention immediately.
Eye contact	: Immediately flush with plenty of water. Get medical attention.
Skin contact	: Remove contaminated clothing and wash skin thoroughly with soap and water.
Inhalation	: Remove patient to fresh air.
Notes to physician	:
Poisoning symptoms	: Abdominal pain, vomiting, muscular cramps, unconsciousness, convulsions.
Medical treatment	: Treatment is symptomatic.

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SECTION 6 : FIRE FIGHTING MEASURES

- Extinguishing media : CO₂, foam, 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 as indicated in Section 8. Evacuate non essential personnel. Collect the spill into waste container for disposal. Wash the contaminated area with a little water and detergent. Adsorb with inert material such as clay or earth. Collect into the same container for disposal. Prevent the spillage from entering local drainage system.

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

SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

- Exposure limit : No data available
Engineering measures : Local exhaust ventilation
Personal protection : Wear pesticide respiratory masks, protective gloves and clothing.

SECTION 10 : STABILITY AND REACTIVITY

- Conditions to avoid : Direct sunlight, heat and extreme temperature
Incompatible : Acids and heating cause depolymerisation to acetaldehyde and paraldehyde.
Decomposition Products : Acetaldehyde and paraldehyde.
Hazardous polymerization : No data available
Stability : Stable under normal conditions.

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SECTION 11 : TOXICOLOGICAL INFORMATION (TECHNICAL)

Acute Toxicity :

			<u>95% Confidence Intervals</u>
Oral LD ₅₀ :	(Rat) male	2,158.4 mg/Kg	1,243.3 - 3,759.5 mg/Kg
	(Rat) female	3,162 mg/Kg	1,463.9 - 3,182.3 mg/Kg
Dermal LD ₅₀ :	(Rat) male	> 10 g/Kg	
	(Rat) female	> 10 g/Kg	
Oral LD ₅₀ :	283 mf/kg (Farm Chemicals Handbook 99')		

- Mutagenic Effect : An Ames test and a spot test with metaldehyde were negative
In vitro gene mutation with mouse lymphoma cells was negative
Chromosome aberration in CHO cells was negative
- Teratogenic Effect : Dietary levels of 200, 1,000 and 5,000 ppm of Metaldehyde were not teratogenic in 3 generations of experimental female rat.
- Oncogenicity : Dietary levels as high as 5,000 ppm over a 2-year period did not increase the incidence of tumours in male and female rats.
- Carcinogenicity : No data available
- Reproductive Effect : Adverse effects were seen in male and female reproduction, and in the survival rate of offspring, during a 3-generation study of rats exposed to chronic ingestion of Metaldehyde. Dietary levels of 1,000 and 5,000 ppm interfered with the reproduction of female rats in a 3-generation test. Fifty percent of female rats fed 5,000 ppm Metaldehyde showed paralysis; the onset of paralysis appeared to be related to the time of delivery.
- Effects of Overexposure : Long term, repeated skin exposure to Metaldehyde can result in dermatitis, inflammation of skin in human. Prolonged eye exposure can cause conjunctivitis. Two-year toxicity studies and three generations reproductive studies in rats found liver enzyme activities and increased liver weight at 5,000 ppm in the diet.
- Irritant Properties : Metaldehyde is reported to be irritating to the skin, eyes and respiratory system but there have been no cases of adverse effects to skin and eyes.
- Chronic Effects : No data available
- Sensitising Effect : No significant dermatitis has been seen in patch tests.
- Target Organs : No data available
- Medical Conditions Generally Aggravated by exposure: No data available

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Other observation : The central nervous system is either depressed or excited by metaldehyde or its metabolites. Liver and brain damage, as well as inflammation of G.I. tract, is also known to take place upon poisoning by this molluscicide. Metaldehyde is slowly decomposed in the body to a substance called acetaldehyde, a chemical acts like a narcotic. Death from Metaldehyde poisoning generally results from overdepression of control centre in the brain that are responsible for normal function of respiratory and vasomotor systems. Metaldehyde is readily absorbed from gastrointestinal tract. Its metabolites can cross the blood-brain barrier, as evidenced by their effect on the levels of consciousness of experimental animals.

SECTION 12 : ECOLOGICAL INFORMATION (TECHNICAL)

Mobility & Bioaccumulation : No data available

Biodegradability : 18% (28 days DOC loss, OEC 301E)

Breakdown Product : Metaldehyde is gradually degraded by depolymerization to acetaldehyde, followed by oxidation to acetic acid. Heavy rain, high temperature (above 25°C), mineral acids and sunlight (UV radiation) accelerate the breakdown of Metaldehyde.

Degradation of residues in soil : The very small amount of Metaldehyde which enters the soil is rapidly depolymerized by the inorganic acids which are constantly present.

Aquatic Toxicity :

LC₅₀ (96 hr) : (Rainbow trout) 75 mg/L

EC₅₀ (48 hr) : (daphnia magna) > 90 mg/L

EC₅₀ (96 hr) : (Green algae) 73.5 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.

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SECTION 15 : REGULATORY INFORMATION

Pesticides Act : Class IV

CPL Regulation : No significant hazard under CPL regulations.

SECTION 16 : OTHER INFORMATION

Reference : (a) Material Safety Data Sheet - Siputox
Date : 19-1-2004

(b) Material Safety Data Sheet - Metaldehyde Technical
Date : 31 December 2007

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

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

(e) 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.