

# MATERIAL SAFETY DATA SHEET

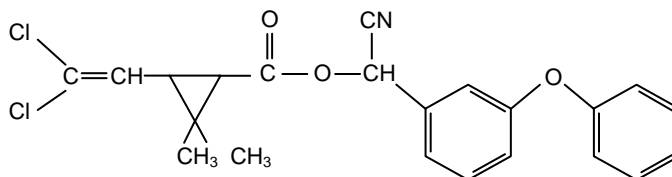
## Introductory Details

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Date of preparation : 7 April 2004  
Date revised : 4 October 2007

## SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product Details

Product Name : Cypermethrin 5.5% EC  
Trade Name : ACM CYBERTHRIN 5.5  
Chemical Name : (±)-" -Cyano-3-phenoxybenzyl (±)cis,trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane-carboxylate  
Chemical Formula : C<sub>22</sub>H<sub>19</sub>Cl<sub>2</sub>NO<sub>3</sub>  
Molar Mass : 416.3  
Chemical Family : Pyrethroid  
Manufacturer's Code : -  
Use : Insecticide  
Structural Formula :



*Cypermethrin*

### 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
(±)-"-Cyano-3-phenoxy benzyl (±)cis,trans-3-(2,2-dichlorovinyl)-2,2-dimethyl cyclopropane-carboxylate	52315-07-8	5.5 %	Refer to Section 9	Refer to Section 11
Surfactant	-	< 10 %		
Solvent	-	Balance		

## SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Amber liquid  
Odour : Characteristic odour  
Solubility : Miscible with water  
Boiling Point : No data available  
Melting Point (technical) : 80.5°C  
Vapour Pressure (technical) :  $1.9 \times 10^{-7}$  Pa  
Percentage Volatiles : No data available  
Evaporation Rate : No data available  
Vapour Density : No data available  
Specific Gravity : 0.89 g/ml  
Flash Point : 30°C  
Autoignition temperature (technical) : > 220°C  
Flammable Limit (%) : No data available  
Decomposition Point (technical) : Decompose at > 220°C

## SECTION 4 : HAZARD IDENTIFICATION

Harmful by inhalation, in contact with skin and if swallowed.  
Irritating yo eyes, respiratory system and skin.  
Flammable

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## **SECTION 5 : FIRST AID MEASURES**

Ingestion : Induce vomiting or carry out gastric lavage with care to prevent asphyxlation.  
Get prompt medical attention.  
Eye contact : Flush with plenty of water.  
Skin contact : Remove contaminated clothing and wash skin thoroughly with soap and water.  
Inhalation : Remove patient to fresh air.  
Notes to physician :  
Medical treatment : Treatment is symptomatic.

## **SECTION 6 : FIRE FIGHTING MEASURES**

Extinguishing Media : CO<sub>2</sub>, dry chemical.  
Fire fighting instruction : Fire fighters should wear full-faced self-contained breathing apparatus and protective clothing.  
Special hazards : Combustion gives toxic gas of HCN.  
Thermal decomposition will evolve NO<sub>x</sub>, HCN. Photochemical decomposition has been observed in laboratory studies.

## **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 : Read the label before use. Wear plastic or synthetic gloves and boots, goggles and prepare eye wash bottle with clean water on-site. Protective clothing should be changed at least daily.  
Storage : Keep in original container, tightly closed, in a cool dry and well-ventilated place, out of reach of children. Keep away from foodstuffs and animal feeds. Avoid skin contact.

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## SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

- a. Exposure Limit : ADI 0.05 mg/kg b.w. (Technical)
- b. Engineering measures : Local exhaust ventilation
- c. Personal protection : Wear plastic or synthetic gloves and boots, goggles and prepare eye wash bottle with clean water on-site.
- d. Occupational exposure : Refer Appendix 1
- e. Biological exposure : Refer Appendix 2

## SECTION 10 : STABILITY AND REACTIVITY

- Conditions to avoid : Direct sunlight, heat and extreme temperature
- Incompatible : Incompatible with acids and alkalines.
- Decomposition Products : Thermal decomposition will evolve NO<sub>x</sub>, HCN. Photochemical decomposition has been observed in laboratory studies.
- Hazardous polymerization : No data available
- Stability : Stable under normal conditions.

## SECTION 11 : TOXICOLOGICAL INFORMATION

### Toxicity Data :

#### (TECHNICAL)

- ADI (JMPR) : 0.05 mg/kg
- Acute Oral LD<sub>50</sub> : (Rat) 250 - 4150 mg/kg  
(Tech 7180 mg/kg)
- Acute Dermal LD<sub>50</sub> : (Rabbit) > 2000 mg/kg
- No mutagenic, teratogenic or carcinogenic activities.

#### (ACTIVE INGREDIENT)

- LD<sub>50</sub> Oral (rat) : 187 – 326 mg/kg b.w. @ male  
150 – 500 mg/kg b.w. @ female
- LD<sub>50</sub> Dermal (rat) : 1600 mg/kg b.w.
- LD<sub>50</sub> Inhalation (rat) : 2.5 mg/L air (4 hours)
- Corrosiveness Irritancy
- Eye irritancy : Moderately irritant to rabbit eye
- Skin irritancy : Moderately irritant to rabbit eye

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Carcinogenicity : No  
Reproductive Effect : No  
Effects of overexposure : Irritating to skin, mucous membrane.  
Chronic effects : No data available  
Target organs : No data available  
Medical Conditions Generally Aggravated by Exposure : No data available

## **SECTION 12 : ECOLOGICAL INFORMATION (TECHNICAL)**

Mobility & Bioaccumulation : Low potential for bioaccumulation in water  
Biodegradability : Rapidly degraded under aerobic conditions  
Half Life : 3 days  
Aquatic Toxicity : Harmful to aquatic organisms  
Toxic Effects on Organisms :  
    LC<sub>50</sub> (Rainbow Trout) (96 h) : 0.005 mg/L  
    LC<sub>50</sub> (Carp) (96 h) : 3.63 mg/L  
    EC<sub>50</sub> (Daphnia Magna) (48 h) : 0.66 µg/L  
    LD<sub>50</sub> (Bee) (Topikal) : 0.17 µg/bee  
    Very toxic to bees.

## **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, Flammable, Irritant

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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

Safety Phrases : S2 Keep out of reach of children  
S16 Keep away from sources of ignition - No Smoking.  
S23 Do not breathe vapour  
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

## **SECTION 16 : OTHER INFORMATION**

Reference : (a) Material Safety Data Sheet - Cyberthrin 5.5% EC  
Date : 18-7-1998

(b) Material Safety Data Sheet - ACM Cyberthrin Tech.  
Date of preparation : 5<sup>th</sup> April 2002

(c) Material Safety Data Sheet - Cypermethrin Technical  
Imaspro Resources Sdn. Bhd. Date : 3 Mar 2005

(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.

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Appendix 1

## **Occupational Exposure**

Laboratory workers and field operators handling natural and synthetic pyrethroids, including Cypermethrin, have noticed a transient sensation (described as “tingling” or “burning” sensations) of the skin in the periorbital area of the face or of other sites after direct exposure. The sensations have been interpreted as being caused by spontaneous repetitive firing of local sensory nerve fibres or nerve endings, with threshold that have been transiently lowered by the compound (Wouters & Van den Bercken, 1978). There is a delay of about 30 min. before onset of these symptoms following pyrethroid exposure; the sensation generally lasts only a few hours and does not persist for more than one after exposure. (Van den Bercken & Vijverberg, 1980, Le Quesne et. al., 1980)

In another field study in India, 18 workers, including spraymen (spraying an emulsifiable concentrate formulation by mist-blower or knap-sack), mixers and loaders, handled cypermethrin daily for 5 consecutive days. Medical examination, with special attention to the sensory function of the peripheral nervous system, was carried before, during and after spraying (Suthers & Marlow, 1981). No compound-related adverse clinical effects of peripheral neuropathy were noticed in any of the workers. The urinary excretion of the cypermethrin metabolite (methyl ester of the cyclopropane carboxylic acid moiety) increased from day 1 to 5 of the study, but decreased 24 hours after spraying had ceased. On the 5<sup>th</sup> day, concentration of up to 0.18 mg (average 0.1 mg) were found in the 24-h urine of workers using the mist-blower. Concentration were lower in workers using the knap-sack sprayer.

A field study was carried out on Indian workers in the Satara district in India prior to, during and after spraying cotton with the synthetic pyrethroid formulations, Cypermethrin (Cymbush). The formulations were applied using a mist-blower or knap-sack spray. Exposure of 7 spraymen and 2 loaders/mixers was monitored by measuring the 24-h urinary excretion of 3-(4'-hydroxyphenoxy) benzoic acid, and medical assessments were carried out by 4 medical doctors. The sensory function of the peripheral nervous system was also assessed. The formulations were applied at the recommended rates; Cymbush, 70 g a.i./ha. Average exposure was approximately 8h per day for 5 days. No compound-related adverse clinical effects were noticed. The average urinary excretion of 3-(4'-hydroxyphenoxy) benzoic acid increased from day 1 to day 5, but then decreased 24 hours after spraying had ceased (Hart et. al., 1982).

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Appendix 2

## **Biological Exposure**

Desi et. al. (1986b) carried out a biological monitoring and health surveillance study on 11 workers spraying organophosphate carbamate and pyrethroid pesticides in greenhouse during the whole year in comparison with 10 control persons. During the work, protective clothing and masks were worn before and after a regular spraying period with pyrethroids (including, cypermethrin). Extensive medical examinations, such as urinalysis, haematology, immunoglobulin levels, whole blood cholinesterase activity, serum-gamma-glutamyltransferase activity, chromosome analysis and electro cardiography were performed over a period of 3 months. The amount of cypermethrin in the blood was just at the limit of detection. No health injuries or other significant changes in the parameters studied were found.