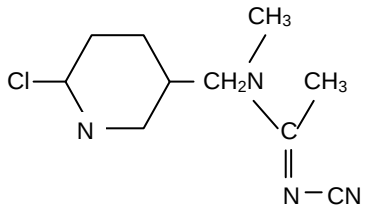
MATERIAL SAFETY DATA SHEET

Date of preparation : 23 April 2004
Date revised : 11 June 2008

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

Product Name	: Acetamiprid 3% EC
Trade Name	: MOSPILAN 3% EC
Chemical Name	: (*E*)-N^1-((6-chloro-3-pyridyl)methyl)-N^2-cyano-N^1-methylacetamidine
Chemical Formula	: $C_{10}H_{11}ClN_4$
Molar Mass	: 222.68
Chemical Family	: Cyanomidine
Manufacturer's Code	: -
Use	: Insecticide
Structural Formula	:



Acetamiprid

1.2 Company Identification

Manufacturer

Name and Address	: Agricultural Chemicals (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

MATERIAL SAFETY DATA SHEET

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENT

Chemical Name	CAS No.	Proportion	Exposure Limit	Toxicity Data
(*E*)-N^1-((6-chloro-3-pyridyl) methyl)-N^2-cyano-N^1-methyl acetamidine	135410-20-7	3%	No data available	Refer to Section 11
Surfactant	-	< 15%		
Solvent	-	Balance		

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Pale yellow to pale brownish liquid
Odour : Aromatic odour
Solubility : Miscible with water
Boiling Point : No data available
Melting Point (technical) : 98.9°C
Vapour Pressure : < 1.0×10^{-6} Pa at 25°C (According to OECD guideline No. 107)
Density : 0.90 g/cm^3
Percentage Volatiles : No data available
Evaporation Rate : No data available
Vapour Density : No data available
Specific Gravity : No data available
Flash Point : 34°C
Autoignition temperature : No data available
Flammable Limit (%) : No data available

SECTION 4 : HAZARD IDENTIFICATION

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

MATERIAL SAFETY DATA SHEET

SECTION 5 : FIRST AID MEASURES

Ingestion	: Induce vomiting after drinking 1 - 2 glasses of water. Get prompt medical attention.
Eye contact	: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.
Skin contact	: Remove contaminated clothing and wash skin thoroughly with soap and water.
Inhalation	: Remove victim to fresh air. Get medical attention.
Notes to physician	:
Poisoning symptoms	: Tremor, salivation, convulsion and mydriasis.
Medical treatment	: Treatment is symptomatic.

SECTION 6 : FIRE FIGHTING MEASURES

Extinguishing Media	: CO_2, dry chemical powder, foam, water fog.
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	: Read the label before use. Wear pesticide respiratory masks, protective gloves and clothing while handling. After handling, wash throughly with soap and water before eating, drinking or smoking and change to clean clothing.
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.

MATERIAL SAFETY DATA SHEET

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 : Strong alkaline material
Decomposition Products : No data available
Hazardous polymerization : No data available
Stability : Stable under normal conditions.

SECTION 11 : TOXICOLOGICAL INFORMATION (TECHNICAL)

Toxicity Data :

Acute Oral LD_{50} (14 days)	: (Rat) male	217 mg/kg
	female	146 mg/kg
	(Mouse) male	198 mg/kg
	female	184 mg/kg
Acute Dermal LD_{50} (14 days)	: (Rat) male & female	> 2000 mg/kg
Inhalation LD_{50} (14 days)	: (Rat) male & female	> 300 mg/m^3
Eye Irritation	: (Rabbit) male	Not irritant
Skin Irritation	: (Rabbit) male	Not irritant
Skin Sensitization	: (Guinea pig) female	Negative

Subchronic Toxicity :
Acetamiprid was administered to rats, mice and dogs continuously over a period of 3 months in diet. The rats tolerated 200 ppm of Acetamiprid in the diet for both sexes (equivalent to 12.4 mg/Kg/day for males and 14.6 mg/Kg/day for females). For male and female mice, the tolerated dose level showing no damages was determined to be 400 ppm in the diet (53.2 mg/Kg/day for males and 64.6 mg/Kg/day for females). The 'no-observed effect' level for male and female dogs was determined to be 800 ppm (32 mg/Kg/day) for males and females.

MATERIAL SAFETY DATA SHEET

Chronic effects :
The long term toxicological effects after continuous administration of Acetamiprid in the diet was investigated using rats and dogs. The following no effect levels were determined from the above studies :

24-month treatment period :	(Rat) male	7.1 mg/kg/day
	(Rat) female	8.8 mg/kg/day
12-month treatment period :	(Dog) male	20 mg/kg/day
	(Dog) female	21 mg/kg/day

Mutagenic Effect :
It was concluded that there was no mutagenicity potential of Acetamiprid based on the results of investigation using various *in vitro* and *in vivo* test systems including acterial reverse mutation, *in vitro* and *in vivo* chromosomal aberrations, micro nucleus and unscheduled DNA synthesis test.

Teratogenic Effect :
The pregnant females of rats or rabbits were administered with Acetamiprid by gavage throughout the critical period of gestation. There were no evidence of any primary embryotic or teratogenic effects in either species.

Carcinogenicity :
The carcinogenic potential was investigated using rats and mice after continuous exposure of Acetamiprid to the animals during almost their life span in the diet. There is no evidence of carcinogenic properties for rats or mice after 24 and 18 months exposure, respectively.

Reproductive Effect :
Acetamiprid was administered to rats in the diet over 2 generations. The no effect level of Acetamiprid was determined to be 100 ppm (6.67 mg/Kg/day for males and 8.42 mg/Kg/day for females) with regard to the systemic adult toxicity, 280 ppm (18.9 mg/Kg/day for males and 23.1 mg/Kg/day for females) with regards to offspring developmental parameters, and more than 800 ppm (54.6 mg/Kg/day for males and 66.5 mg/Kg/day for females) for reproductive abilities.

Neurotoxic Effect :
Acetamiprid did not cause any clinical signs suggestive of delayed neurotoxicity and histological changes after single oral administration of the test materials to hens followed by observation for 21 - 22 days. Brain cholinesterase and brain and spinal cord neurotoxicity esterase were not affected by treatment.
Effects of overexposure : No data available
Target organs : No data available
Medical Conditions Generally Aggravated by exposure : No data available

MATERIAL SAFETY DATA SHEET

SECTION 12 : ECOLOGICAL INFORMATION (TECHNICAL)

Mobility & Bioaccumulation : No data available
Biodegradability : No data available
Aquatic Toxicity :

LC_{50} (96 hr) : Carp (*Cyprinus carpio*)	> 100 mg/l (at 24.3 - 25°C)
LC_{50} (48 hr) : *Daphnia carinata*	77 mg/l (at 22.5 - 25.2°C)

Bird Toxicity :

Acute LC_{50} (14 day) :	Bobwhite quail (Colinus virginianus)	180 mg/kg
	Mallard duck (Anas platyrhrhynchos)	98 mg/kg
Subacute LC_{50} : (5 day feeding)	Bobwhite quail (Colinus virginianus)	> 5,000 mg/kg
	Mallard duck (Anas platyrhrhynchos)	> 5,000 mg/kg

Earthworm Toxicity

Acute LC_{50} (7 day)	Eisenia foetida	10 mg/kg
Acute LC_{50} (14 day)	Eisenia foetida	9 mg/kg

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.

MATERIAL SAFETY DATA SHEET

SECTION 15 : REGULATORY INFORMATION

Pesticides Act : Class III

CPL Regulations : Class - Harmful, Flammable

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

Safety Phrases : S2 Keep out of reach of children
S13 Keep away from food, drink and animal feeding stuff
S16 Keep away from sources of ignition - No Smoking.
S37/39 Wear suitable gloves, eye/face protection.

SECTION 16 : OTHER INFORMATION

Reference : (a) Material Safety Data Sheet - Mospilan 3% EC
Date : 2-11-1999

(b) Material Safety Data Sheet -Mospilan Technical
Date of preparation : 16 May 2008

(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.