

MATERIAL SAFETY DATA SHEET

Introductory Details

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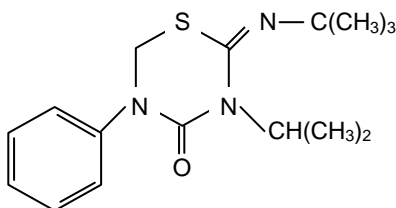
Date of preparation : 27 March 2004

Date revised : 4 October 2007

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

Product Name : Buprofezin 50% WP
Trade Name : APPLAUD 50 WP
Chemical Name : 2-tert-butylimino-3-isopropyl-5-phenylperhydro-1,3,5-thiadiazin-4-one
Common Name : Buprofezin
Chemical Formula : C₁₆H₂₃N₃OS
Molar Mass : 305.4
Chemical Family : Insect growth regulator
Manufacturer's Code : -
Use : Insecticide
Chemical Structure :



Buprofezin

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

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SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENT

Chemical Name	CAS No.	Proportion	Exposure Limit	Toxicity Data
2-tert-butylimino-3-iso propyl-5-phenylperhydro- 1,3,5-thiadiazin-4-one	69327-76-0	50%	Refer to Section 9	Refer to Section 11
Surfactant	-	< 5%		
Others	-	Balance		

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Off-white wettable powder
Odour	: Characteristic odour
Solubility	: Dispersible in water
Boiling Point	: No data available
Melting Point (technical)	: 104.5-105.5
Vapour Pressure (technical,mmHg at 25°C):	9.4×10^{-6}
Percentage Volatiles	: No data available
Evaporation Rate	: No data available
Vapour Density	: No data available
Specific Gravity (technical)	: 1.18 at 20°C
Flash Point	: Non-inflammable
Autoignition temperature	: No data available
Flammable limit (%)	: No data available
Partition coefficient (technical)	: $\log P_{o/w} = 4.3$

SECTION 4 : HAZARD IDENTIFICATION

Harmful by inhalation.

Irritating to skin.

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SECTION 5 : FIRST AID MEASURES

- Ingestion : If swallowed, give large quantity of water and induce vomiting carefully not to drawn into lung. Get prompt medical attention.
- Eye contact : Immediately flush with plenty of water. Get medical attention.
- Skin contact : Remove contaminated clothing and wash skin thoroughly with soap and water. If irritation persists, get medical attention. Sensitized persons should avoid further contact and reuse of clothing.
- Inhalation : Remove patient from exposure, keep warm and at rest. Obtain medical attention as a precaution.

Notes to physician :

- Poisoning symptoms :
- Diarrhoea, lacrimation, decrease of locomotive movement.
- Ingestion of large amount of this product may cause hypoactivity.
- Eye contact with this product may cause slight eye irritation, but temporary injury.
- Prolonged skin contact with this product may cause slight erythema in susceptible individual.
- Repeated contact may cause allergic reaction in susceptible individuals.
- Ingestion of large amount of this product may cause hypoactivity.
- Medical treatment : Treatment is symptomatic.

SECTION 6 : FIRE FIGHTING MEASURES

- Extinguishing Media : Foam, CO₂, dry chemical, water spray.
- Fire fighting instruction : Fire fighters shall wear full-faced self-contained breathing apparatus and protective clothing
- Special hazards : Hazardous combustion products are carbon dioxide, carbon monoxide, nitrogen oxides and sulfur oxide.

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.

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SECTION 8 : HANDLING AND STORAGE

- Handling : Wear pesticide respiratory masks, chemical safety goggles, protective gloves and clothing while handling. Read the label before use.
- Storage : Keep in original container, tightly closed, out of reach of children. Keep away from foodstuffs and animal feeding stuffs.

SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

- a. Exposure Limit : 2 mg/m³ (JAIH)
1 mg/m³ (NICHINO)

The exposure limit is based on Technical Material

JAIH : Japan Association of Industrial Health

NICHINO : Nihon Nohyaku Exposure Limit

- b. Engineering measures : Local exhaust ventilation
- c. Personal protection : Wear pesticide respirator mask, chemical safety goggles, protective gloves and clothing.

SECTION 10 : STABILITY AND REACTIVITY

- Conditions to avoid : Direct sunlight, heat and extreme temperature
- Incompatible : No data available
- Decomposition Products : May evolve carbon monoxide and nitrogen oxides upon combustion.
- Hazardous polymerization : No data available
- Stability : Stable for at least 3 years under normal warehouse conditions.

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SECTION 11 : TOXICOLOGICAL INFORMATION (TECHNICAL)

Toxicity Data :

Acute Oral LD ₅₀	: (Rat) male	2198 mg/kg
	female	2355 mg/kg
Acute Dermal LD ₅₀	: (Rat) male	> 5000 mg/kg
	female	> 5000 mg/kg
Inhalation LC ₅₀	: (Rat)	> 4.57 mg/L (4 hr)
Eye Irritation (Rabbit)	: Slight irritating	
Skin Irritation (Rabbit)	: Slight irritating	
Sensitization (Guinea pig)	: Negative	
Carcinogenicity	: Not carcinogen	
Reproductive Effect	: No effect	
Effects of overexposure	: No data available	
Chronic effects	: Buprofezin did not produce genetic changes in rec-assay and Ames test.	
Target organs	: Organ toxicity in rat was not observed.	
Medical Conditions Generally Aggravated by exposure:	No data available	

Buprofezin:

In repeated dosing study for 13 weeks, rat fed buprofezin exhibited body weight depression, increase of relative liver weight and enlargement of hepatocyte. Dogs fed buprofezin for 2 years exhibited body weight depression, and increase of serum alkaline phosphatase activity and relative liver weight. Rat fed buprofezin for 2 years showed body weight depression. Any clinical parameters showing organ toxicity were not observed. In histopathological examination, an enlargement of hepatocyte and increase of smooth-surfaced endoplasmic reticulum. Buprofezin did not produce tumor in both sexes of rat.

No birth defects were noted in rats and rabbits given buprofezin orally during pregnancy even at amount which produced body weight depression on the mothers. No effects were seen on the ability on male and female rats to reproduce when fed buprofezin for 2 successive generations.

Buprofezin did not produce genetic changes in rec-assay and Ames test. In safety pharmacology studies, buprofezin showed any specific pharmacological effects.

SECTION 12 : ECOLOGICAL INFORMATION (TECHNICAL)

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

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Aquatic Toxicity :
LC₅₀ (48 hours) : (Carp) 2.7 mg/L
LC₅₀ (3 hours) : (Daphnia) > 50.6 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 Harmful by inhalation.
R38 Irritating to skin.

Safety Phrases : S2 Keep out of reach of children
S13 Keep away from food, drink and animal feeding stuff
S25 Avoid contact with eyes
S36 Wear suitable protective clothing

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SECTION 16 : OTHER INFORMATION

- Reference : (a) Material Data Sheet - Applaud 50 WP
Date : 24-12-1994
- (b) Material Safety Data Sheet - Applaud Technical
Date of preparation : 11th April 2002
- (c) Material Safety Data Sheet - Applaud Technical
Date revised : 1 October 2007
- (d) Nihon Nohyaku Material Data Sheet - Applaud 25 WP
MSDS Number : 94011
Date : March 9, 1994
- (e) Material Safety Data Sheet - Applaud Technical
Nihon Nohyaku Co., Ltd.
MSDS number : 940-10
Revision date (V.2) : 18 Mar. 2002
- (f) Guidelines for The Classification of Hazardous Chemicals, DOSH 1997
- (g) Guidelines for The Formulation of A Chemical Safety Data Sheet, DOSH 1997
- (h) 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.