

MATERIAL SAFETY DATA SHEET

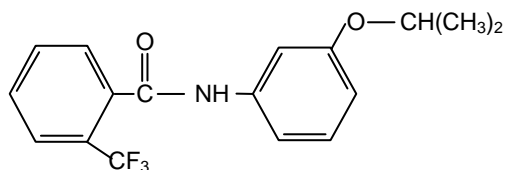
Introductory Details

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Date of preparation : 19 April 2003
Date revised : 4 June 2008

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

Product Name : Flutolanil 15% EC
Trade Name : MONCUT 15% EC
Chemical Name : 3'-isopropoxy-2-(trifluoromethyl) benzanilide
Chemical Formula : $C_{17}H_{16}F_3NO_2$
Molar Mass : 323.31
Chemical Family : Benzanilide compound
Manufacturer's Code : -
Use : Fungicide
Structural Formula :



Flutolanil

1.2 Company Identification

Manufacturer : Available upon request

Importer/Distributor

Name and Address : Agricultural Chemicals (M) Sdn. Bhd.
962, Lorong Perusahaan 8, Taman Perindustrian Perai,
13600 Perai, Penang, 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. 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
3'-isopropoxy-2-(trifluoromethyl)benzanilide	66332-96-5	15 %	Refer to Section 9	Refer to Section 11
Emulsifier and organic solvents	-	Balance		

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Pale brown emulsifiable liquid
Odour : Naphthalene
Solubility : water 9.6 mg/l at 20°C
n-hexane 3 g/l
toluene 65 g/l
chloroform 238 g/l
methanol 606 g/l
Boiling Point : No data available
Melting Point (°C) : 102 - 103°C
Vapour Pressure (mmHg at 20°C) : 1.33×10^{-5}
Percentage Volatiles : No data available
Evaporation Rate : No data available
Vapour Density : No data available
Specific Gravity (H₂O = 1) : 1.07 at 20°C
Flash Point : 110°C
Autoignition Temperature : No data available
Flammable Limit (%) : No data available

SECTION 4 : HAZARD IDENTIFICATION

Harmful by inhalation.
Irritating to eyes and skin.

Potential Health Effects

Eye Contact : May cause eye irritation. But, temporary injury.
Skin Contact : May cause skin irritation and allergic reaction. Repeated contact may cause allergic reaction in susceptible individual.
Ingestion : Ingestion of large amount of this product may cause hypoactivity.

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SECTION 5 : FIRST AID MEASURES

- Ingestion : If swallowed, give large quantities of water and get prompt medical attention. DO NOT give an unconscious person anything to drink.
- Eye Contact : Flush eye with plenty of water for 15 minutes. If irritation persists, get medical attention.
- Skin Contact : Wash with plenty of water and soap. Seek medical attention if irritation occurs.
- Inhalation : Remove patient to fresh air.
- Notes to Physician : No data available

SECTION 6 : FIRE FIGHTING MEASURES

- Extinguishing Media : Water spray (mist), foam, dry chemical or carbon dioxide.
- Fire Fighting Instruction : Firefighters and others that may be exposed to vapors of produces of combustion should wear full protective clothing and self breathing apparatus.
- Special Hazards :
- Hazardous Combustion products : Not known
- Unusual fire or explosion hazard : None

SECTION 7 : ACCIDENTAL RELEASE MEASURE

Leak and/or Spill :

Wear protective clothing such as gloves, dust mask, safety shoes and uniform. Evacuate non essential personnel. Collect the spill into a metal drum for disposal. Wash the contaminated area with a little water and detergent and drain to waste water treatment plant. Prevent spill from entering sewers, water course or low areas. Always work upwind.

SECTION 8 : HANDLING AND STORAGE

- Handling : Handle and open container with care. Avoid contact with skin and eye. Avoid handling near open flame, source of heat or source of ignition. Wash thoroughly with soap and water after handling.
- Storage : Keep bottle closed. Avoid direct sunlight. Do not store near heat and flame. Store in a cool, dry and well ventilated place.

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SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limit : JAIH* : 10 mg/m³
NICHINO** : 2 mg/m³

JAIH* : Japan Association of Industrial Health
NICHINO** : Nihon Nohyaku exposure limit

Engineering Measures : When overexposure is supposed, use with adequate ventilation or in closed systems.

Personal Protection :

Respiratory Protection : Avoid breathing mist or vapor. Used approved respiratory protection equipment when airborne exposure limits are exceeded.

Eye protection : Wear chemical safety goggles where there is significant potential eye contact

Skin protection : Wear appropriate protective clothing and gloves where there is significant potential for skin contact

SECTION 10 : STABILITY AND REACTIVITY

Chemical Stability : Stable for at least 3 years under normal warehouse conditions.

Conditions to Avoid : No data available

Incompatibles : Not known

Decomposition Products : Not known

Hazardous Polymerization : Not known

SECTION 11 : TOXICOLOGICAL INFORMATION

Toxicity Data :

Acute Oral LD₅₀ : (Rat) male 4,913 mg/kg
female 3,542 mg/kg

Acute Dermal LD₅₀ : (Rat) male > 2,000 mg/kg
female > 2,000 mg/kg

Inhalation LD₅₀ (4 hr) : (Rat) male > 5.98 mg/l (flutolanil)

Flutolanil :

In repeated dosing studies for 1 month, rats fed flutolanil (50,000 ppm) exhibited only slight body weight depression. An increase of relative liver weight and slight enlargement of hepatocytes with

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vacuolation around central venous were observed in rats fed 10,000 ppm flutolanil.

Rats fed flutolanil for 2 years showed only body weight depression. Any clinical parameters showing organ toxicity were not observed. Flutolanil did not produce any tumors in both of sexes of rats. In dog 2 years study, dogs fed flutolanil (1,250 mg/kg/day) showed body weight depression, vomiting and salivation.

No birth defects were noted in rats and rabbits given flutolanil orally during pregnancy. No effects were seen on the ability of male and female rats to reproduce when fed flutolanil for 2 successive generations.

Flutolanil did not produce genetic changes in Rec-assay and Ames test.

In safety pharmacology studies, flutolanil did not show any specific pharmacological effects.

Carcinogenicity : Not carcinogen
Reproductive Effect : No birth defects were noted
Effects of Overexposure :
 Eye Irritation : Irritating
 Skin Irritation : Irritating
 Sensitizing Effect : Negative
Chronic Effects : No data available
Target Organs : No data available
Medical Conditions Generally Aggravated by Exposure : No data available

SECTION 12 : ECOLOGICAL INFORMATION

Mobility & Bioaccumulation : No data available
Biodegradability : No data available
Aquatic Toxicity
 LD₅₀ (48 h) : Carp 9.8 mg/l (flutolanil)
 (3 h) : Daphnia 24.5 mg/l (flutolanil)

Insect : Contact with this product may cause adverse effect.

SECTION 13 : DISPOSAL INFORMATION

Excess pesticide and rinsate should be disposal of according to label instruction and/or local regulation. Dispose used container according to the local regulation. Do not dump into sewers, the ground or into any body of water.

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SECTION 14 : TRANSPORT INFORMATION

Follow local regulations.

Follow the precaution indicated in the handling and storage section.

SECTION 15 : REGULATORY INFORMATION

Pesticides Act :

Class : IV

CPL Regulations :

Class : Harmful

Risk Phrase : R20 Harmful by inhalation
R36/38 Irritating to eyes and skin

Safety Phrase : S25 Avoid contact with eyes
S36/39 Wear suitable protective clothing, eye/face protection
S38 In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 16 : OTHER INFORMATION

Reference :

- a. MSDS - Moncut 15 EC, date : 16 October 1995, no. : 95025
Nihon Nohyaku Co., Ltd.
- b. MSDS - MONCUT 15% EC, date : 29 December 1999
Agricultural Chemicals (M) Sdn. Bhd.
- c. Farm Chemicals Handbook '99
- 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

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.