

# Material Safety Data Sheet



## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

**Product name:** CANE STRIKE LIQUID FUNGICIDE

**Synonyms:** Crop Care MSDS No. 41892, Flusilazole

**CAS-No.:**

**Molecular Formula:**

**Supplier:** Crop Care Australasia Pty Ltd

**ACN:** 061 362 347

**Street Address:** 77 Tingira Street

Pinkenba 4008

Australia

**Telephone:** + 61 7 3867 9100

**Facsimile:** + 61 7 3867 9110

**Emergency telephone number:** 1 800 033 111 (ALL HOURS)

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Recommended use:** Fungicide.

**Appearance:** Blue liquid.

CHEMICAL ENTITY	CAS NO.	PROPORTION
Flusilazole	-	0.19% (1.6 g/L)
Pigment	-	LOW
Water	7732-18-5	MED
Ethanol	-	VHIGH
		100%

PROPORTION (% weight per weight):

VHIGH >60, HIGH 30-60, MED 10-29, LOW 1-9, VLOW <1

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS) or are National Registration Authority (NRA) approved active constituents.

## 3. HAZARDS IDENTIFICATION

Based on available information, not classified as hazardous according to criteria of Worksafe Australia.

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

**Product name:** CANE STRIKE LIQUID FUNGICIDE

**Substance Key:** 000504189201

**Issued :** 23.03.2000

**Version:** 1.4

**Page:** 1 of 8

# Material Safety Data Sheet



**Class:** 3 Flammable Liquid

**Poisons Schedule (Aust)/Toxic Substance (NZ):** S6

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

## 4. FIRST AID MEASURES

Poison Information Centres in each State capital city can provide additional assistance for scheduled poisons (Phone Australia; 131 126).

**Ingestion:** Rinse mouth with water. Give plenty of water to drink. If vomiting occurs give further water. Never give anything by mouth to an unconscious patient. Seek medical advice.

**Eye contact:** Irrigate with copious quantities of water for 15 minutes. In all cases of eye contamination it is a sensible precaution to seek medical advice.

**Skin contact:** Wash contaminated skin with plenty of water. Remove contaminated clothing and wash before re-use. If irritation occurs seek medical advice.

**Inhalation:** Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If breathing laboured and patient cyanotic (blue), ensure airways are clear and have qualified person give oxygen through a face mask. If breathing has stopped apply artificial respiration at once. In event of cardiac arrest, apply external cardiac massage. Seek medical advice.

**Notes to physician:** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Specific hazards:** Highly flammable liquid. May form flammable vapour mixtures with air. Avoid all ignition sources. Flameproof equipment necessary in area where this chemical is being used. Nearby equipment must be earthed. Vapour may travel a considerable distance to source of ignition and flash back.

**Fire fighting further advice:** Highly flammable liquid. Heating can cause expansion or decomposition leading to violent rupture of containers. If safe to do so, remove containers from path of fire. Keep containers cool with water spray. Fire fighters to wear self-contained breathing apparatus if risk of exposure to vapour or products of combustion.

**Suitable extinguishing media:** Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILLS:** Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Use absorbent (soil, sand or other inert

# Material Safety Data Sheet



material). Collect and seal in properly labelled containers for disposal. Wash area down with detergent and excess water.

LARGE SPILLS: Shut off all possible sources of ignition. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled drums for disposal. Wash area down with detergent and excess water. If contamination of crops or waterways has occurred advise emergency services or State Department of Agriculture.

## 7. HANDLING AND STORAGE

**Storage:** Store in the closed, original container in a dry, well ventilated area. Do not store for prolonged periods in direct sunlight.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### National occupational exposure limits

No value assigned for this specific material by the National Occupational Health and Safety Commission (Worksafe Australia).

However, Exposure Standards for constituents:

	TWA		STEL	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Flusilazole**	-	0.5	-	-
Ethanol	1000	1880	-	-

\*\* Supplier recommended. (1)

As published by the National Occupational Health and Safety Commission (Worksafe Australia).

TWA - the Time-Weighted Average airborne concentrations over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour work day. According to current knowledge these concentrations should neither impair the health of, nor cause undue discomfort to, nearly all workers.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. Exposure Standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

**Product name: CANE STRIKE LIQUID FUNGICIDE**

**Substance Key: 000504189201**

**Issued : 23.03.2000**

**Version: 1.4**

**Page: 3 of 8**

# Material Safety Data Sheet



**Engineering measures:** IN THE WORKPLACE: Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. Use with local exhaust ventilation or while wearing organic vapour respirator. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

**Personal protection equipment:** OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES (Short), RESPIRATOR.

Code:H -Orica Personal Protection Guide No.1, 1998

**MANUFACTURE, PACKAGING AND TRANSPORT:** Avoid skin and eye contact and the inhalation of vapour. Wear overalls, chemical goggles and impervious gloves. Use with adequate ventilation. If inhalation risk exists wear organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

**PREPARATION AND USE OF PRODUCT:** Avoid contact with eyes and skin. Do not inhale spray mist. Wear face shield and goggles. Wash hands after use. After each day's use wash face shield or goggles and contaminated clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Form / Colour / Odour:** Blue liquid.

**Solubility:** Soluble in water.

Specific Gravity (20 C)	: 0.838	Melting Point (C)	: -112.3*
Rel Vapour Density (air=1)	: 1.59*	Boiling Point (C)	: 78.3*
Vapour Pressure (20 C)	: 5.7 kPa*	Decomp. Point (C)	: N Av
Flash Point (C)	: 13*	Sublimation Point	: N App
Flammability Limits (%)	: 3.3-19*	pH	: N Av
Autoignition Temp (C)	: 365*	Viscosity	: N Av
% Volatile by volume	: 99	Evaporation Rate	: N Av
Solubility in water (g/L)	: N Av	(n-Butyl acetate=1)	
LogPow (Flusilazole)	: 3.74		

\* Values for ethanol.

(Typical values only - consult specification sheet)

N Av = Not available

N App = Not applicable

## 10. STABILITY AND REACTIVITY

**Stability:** Reacts with oxidising agents, concentrated nitric acid and concentrated sulphuric acid. Aluminium containers should be avoided as aluminium alcoholates may be formed under certain conditions.

## 11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms that may arise if the product is mishandled and overexposure occurs are:

# Material Safety Data Sheet



## Acute Effects

**Ingestion:** Swallowing can result in nausea, vomiting, dizziness, fatigue, headache and central nervous system depression. If the victim is uncoordinated there is a greater likelihood of vomit entering the lungs and causing subsequent complications. (2)

**Eye contact:** May be an eye irritant.

**Skin contact:** Contact with skin may result in mild irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis.

**Inhalation:** Vapour may be irritant to mucous membranes and respiratory tract. Inhalation of vapour can result in headaches, dizziness, fatigue and possible nausea. Inhalation of high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and, if exposure is prolonged, unconsciousness.

## Long Term Effects

Evidence from animal tests and studies on exposed humans indicate that repeated or prolonged exposure to ethanol by inhalation or ingestion could result in liver damage. (2) Available evidence indicates that repeated or prolonged exposure to flusilazole may cause liver damage, blood changes and reproductive effects. (1)

## Acute toxicity / Chronic toxicity

No LD50 data available for the product. However, for the constituents,

FLUSILAZOLE: (1)

Oral LD50 (rat): 674-1100 mg/kg.

Dermal LD50 (rabbit): >2000 mg/kg.

Inhalation LC50 (rat): >5.0 mg/L/4hrs.

SKIN: Mild irritant (rabbit). Not a skin sensitiser.

EYES: Mild irritant (rabbit).

Flusilazole was not mutagenic when tested in vitro in bacterial and mammalian cell cultures.

Repeated oral dosing in animals has resulted in increased liver weights, changes in the bladder, kidneys, testes, epididymus and haemolytic effects that were reversible. High levels of exposure in animals have resulted in heart muscle degeneration and pneumonitis.

In a two-generation feeding study, there was an increase in gestation weights in test animals exposed to flusilazole.

The No Observable Adverse Effect Level (NOAEL) in a one year dietary study in dogs was 5 mg/kg/day.

ADI (Acceptable Daily Intake) for humans is 0.002 mg/kg/day. (3)

ETHANOL: (2)

Oral LD50 (rat): 7060 mg/kg.

Inhalation LC50 (rat): 20,000 ppm/10hrs.

Estimated fatal dose (human): 300-400 ml of pure ethanol.

SKIN: Mild irritant (rabbit).

EYES: Moderate irritant (rabbit).

A study of the effects of ethanol inhalation in humans, found that between 5000-10000 ppm subjects experienced coughing and smarting of the eyes and nose, with the symptoms disappearing within minutes.

# Material Safety Data Sheet



People exposed at 15000 ppm experienced continuous lacrimation and coughing. Irritation of the eyes and respiratory tract were not noted at concentrations below 5000 ppm.

There is no clear evidence that ethanol is carcinogenic to laboratory animals; it is, however a tumour promoter. Ethanol is typically inactive in genotoxic assays, but on some occasions, a weak response has been noted.

Oral exposure to ethanol produces malformations and developmental toxicity in rats and mice at maternally toxic doses. No developmental effects were observed in rats from inhalation at doses up to 20,000 ppm

## 12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

FLUSILAZOLE: (1)

AQUATIC TOXICITY:

Very toxic to aquatic organisms.

96hr LC50 (rainbow trout): 1.2 mg/L.

96hr LC50 (bluegill sunfish): 1.7 mg/L.

48hr LC50 (Daphnia magna ): 3.4 mg/L.

LogPow is 3.74

Risk of bioaccumulation in an aquatic species is high.

TERRESTRIAL TOXICITY:

Oral LD50 (mallard duck): >1590 mg/kg.

Dietary LC50 (bobwhite quail, 8d): >5260 ppm.

ETHANOL: (2)

24hr LC50 (rainbow trout): 11,200 mg/L.

96hr LC0 (bluegill sunfish): >13,500 mg/L.

LogPow is -0.3

Risk of bioaccumulation in an aquatic species is negligible.

Ethanol has a low potential for bioaccumulation and is substantially biodegradable in water.

## 13. DISPOSAL CONSIDERATIONS

Dispose of discarded dip and spray solutions by combining with sand/soil mixture and bury under 500 mm of soil away from water sources and homes.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. Break, crush, or puncture and bury empty containers in a local authority landfill. If not available bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers and product should not be burnt.

## 14. TRANSPORT INFORMATION

### Road and Rail Transport

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

UN-No: 1170

Class: 3 Flammable Liquid

Product name: CANE STRIKE LIQUID FUNGICIDE

Substance Key: 000504189201

Issued : 23.03.2000

Version: 1.4

Page: 6 of 8

# Material Safety Data Sheet



**Hazchem code:** 2[Y]E Hazchem Code  
**EPG:** 3A1  
**Packing group:** Packing Group 2

**Proper Shipping Name:** ETHANOL SOLUTION

## Segregation Dangerous

### Goods:

Not to be loaded with explosives (Class 1), flammable gases (Class 2.1), if both are in bulk, toxic gases (Class 2.3), spontaneously combustible substances (Class 4.2), oxidising agents (Class 5.1), organic peroxides (Class 5.2) toxic substances (Class 6.1) or radioactive substances (Class 7), however exemptions may apply.

### Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

**UN-No:** 1170  
**Class:** 3 Flammable Liquid  
**Packing group:** Packing Group 2

**Proper Shipping Name:** ETHANOL SOLUTION

### Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

**UN-No:** 1170  
**Class:** 3 Flammable Liquid  
**Packing group:** Packing Group 2

**Proper Shipping Name:** ETHANOL SOLUTION

## 15. REGULATORY INFORMATION

Based on available information, not classified as hazardous according to criteria of Worksafe Australia.

**Poisons Schedule (Aust)/Toxic Substance (NZ):** S6

## 16. OTHER INFORMATION

### Literary reference

- (1) Material Safety Data Sheet - Flusilazole Tech (CDS 45178).  
Orica Australia Pty Ltd. 03/98
- (2) Material Safety Data Sheet - Ethanol (CDS 01239).  
Orica Australia Pty Ltd. 08/96
- (3) ADI List, Commonwealth Department of Health and Family Services.

**Product name:** CANE STRIKE LIQUID FUNGICIDE

**Substance Key:** 000504189201

**Issued :** 23.03.2000

**Version:** 1.4

**Page:** 7 of 8

# Material Safety Data Sheet



10/99

This Material Safety Data Sheet has been prepared by SHE Pacific Pty Ltd on behalf of Orica Ltd and its subsidiary companies.

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Reason(s) For Issue: Change in Dangerous Goods Information.

Safety Data Sheets are updated frequently. Please ensure that you have a current copy.

This MSDS summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle and use the product in the workplace. Since Orica Limited and its subsidiaries cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.