Material Safety Data Sheet

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

Product name: AGTRYNE MA HERBICIDE

Synonyms: Crop Care MSDS No. 42773

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: Selective post-emergence herbicide.

Appearance: Yellow liquid with an amine odour.

CHEMICAL ENTITY	CAS NO.	PROPORTION
Water	7732-18-5	HIGH
Terbutryne	886-50-0	24.5% (275 g/L)
MCPA, present as the potassium salt	94-74-6	14.3% (160 g/L)
Potassium hydroxide	1310-58-3	LOW
Additives (stabiliser, dispersant, etc.)	-	LOW
	-	
	-	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

Not classified as hazardous according to criteria of Worksafe Australia.

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Poisons Schedule (Aust)/Toxic Substance (NZ): S5

This material is a Scheduled Poison S5 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.

Ingestion: Rinse mouth with water. If more than 15 minutes from a hospital induce vomiting, preferably using Ipecac Syrup APF. Seek immediate medical assistance.

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 swelling, redness, blistering, or 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. Seek medical advice.

Notes to physician: Treat symptomatically.
EMERGENCY TREATMENT: (1)
1. Remove ingested poison by thorough gastric lavage with saturated bicarbonate solution. If gastric lavage cannot be accomplished immediately, give syrup of ipecac to induce emesis.
2. In respiratory distress or cyanosis, maintain airway and respiration.

5. FIRE-FIGHTING MEASURES

Specific hazards: Not combustible.

Fire fighting further advice: Not combustible. Decomposes on heating emitting toxic fumes including those of chlorides , carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of decomposition.

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

LARGE SPILLS: Slippery when spilt. Avoid accidents, clean up immediately. 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 cool, well ventilated locked area away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight.

This material is a Scheduled Poison S5 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	
	ppm	mg/m3
Potassium hydroxide	-	2

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.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should 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.

Engineering measures: Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. Keep containers closed when not in use.

Personal protection equipment: Orica Personal Protection Guide No.1, 1998: B - OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES (S).

MANUFACTURE, PACKAGING AND TRANSPORT: Avoid skin and eye contact and the inhalation of vapour/mist. Wear overalls, safety glasses and impervious gloves. Always wash hands before smoking, eating, drinking or using the toilet.
If inhalation risk exists, wear organic respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
PREPARATION AND USE OF PRODUCT: Attacks eyes. WIll irritate the skin. Avoid contact with skin. Repeated exposure may cause allergic disorders. When preparing the spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and washable hat, elbow-length PVC gloves and goggles. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, goggles and contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form / Colour / Odour: Yellow liquid with an amine odour.

Solubility: Soluble in water.

Specific Gravity (20 C)	: 1.123	Melting Point (C)	: N App
Rel Vapour Density (air=1)	: N Av	Boiling Point (C)	: N Av
Vapour Pressure (20 C)	: N Av	Decomp. Point (C)	: N Av
Flash Point (C)	: N App	Sublimation Point	: N App
Flammability Limits (%)	: N App	pH	: 8-10
Autoignition Temp (C)	: N App	Viscosity	: N Av
% Volatile by volume	: N Av	Evaporation Rate	: N Av
Solubility in water (g/L)	: N Av	(n-Butyl acetate=1)	

(Typical values only - consult specification sheet)

N Av = Not available N App = Not applicable

10. STABILITY AND REACTIVITY

Stability: Forms an alkaline solution with water which may corrode aluminium and zinc.

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 are:

Acute Effects
Ingestion: Swallowing can result in irritation to the mouth, throat, and stomach, nausea, vomiting, and twitching of face muscles. Very large doses can lead to liver, heart and kidney damage, unconsciousness and death. (2,3)

Eye contact: May be an eye irritant.

Skin contact: Contact with skin may result in irritation. May cause skin sensitisation in sensitive individuals.

Inhalation: Vapour may be irritant to mucous membranes and respiratory tract. Inhalation of mists or aerosols may produce respiratory irritation.

Long Term Effects
Some animal test data suggests a carcinogenic potential for terbutryne. This data is not considered relevant to normal industrial or agricultural use but emphasises the need for care in handling. Evidence from animal studies indicate that exposure to repeatedly large amounts of MCPA could result in liver and kidney damage. (2)

Acute toxicity / Chronic toxicity
No LD50 data available for product. However for the active constituents,

TERBUTRYN:
Oral LD50 (rat): 2500 mg/kg. (4)
Dermal LD50 (rat): >2000 mg/kg. (4)
Inhalation LC50 (rat): >8 mg/L/4hr (for an 80% formulation). (4)

SKIN: Slight irritant (rabbit). Mild skin sensitiser (guinea pigs). (4)
EYES: Slight irritant (rabbit).

An oral 6 month study with rats resulted in a NOEL (no observed effect level) of 10 mg/kg/day. At 50 mg/kg/day signs of a central nervoussystem response was observed. (4)

In vitro and in vivo mutagenicity, genotoxicity and clastogenicity assay results indicate that terbutryn is not mutagenic. (4)

Two year feeding studies in rats and mice showed no effect up to (but not including) 3000 ppm. Female rats fed 3000 ppm of Terbutryn tech. showed an increased incidence of liver tumours. Male rats at 3000 ppm showed an increase incidence of thyroid tumours. (4)

Terbutryn was not teratogenic in studies conducted in rats and rabbits. (4)

ADI (Acceptable Daily Intake) in humans is 0.1 mg/kg/day. (5)

MCPA:
Oral LD50 (rat): 900-1160 mg/kg. (2)
Dermal LD50 (rat): >4000 mg/kg. (2)
Inhalation LC50 (rat): >6.36 mg/L/4hr. (2)

SKIN: Moderate irritant. (3)
EYES: Severe irritant. (2)
MCPA was negative in a battery of mutagenicity studies. (2)

Oral doses of 0, 0.15, 0.75, 3.75 mg/kg/day for 1 year to male and female beagle dogs resulted in kidney and liver toxicity at 0.75 mg/kg and 3.75 mg/kg. The no effect level for systemic toxicity was 0.15 mg/kg. (2)

Animal evidence suggests that MCPA may increase the susceptibility of an organism to infection. (3)

ADI (Acceptable Daily Intake) for humans is 0.01 mg/kg/day. (5)

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.
TERBUTRYN:
AQUATIC TOXICITY
Toxic to aquatic organisms.

96hr LC50 (bluegill sunfish): 4 mg/L. (6)
96hr LC50 (carp): 4 mg/L. (6)
96hr LC50 (rainbow trout): 3 mg/L. (4)
96hr LC50 (perch): 4 mg/L. (6)
48hr EC50 (daphnia magna): 2.66 mg/L. (4)
TERRESTRIAL TOXICITY
Non hazardous to terrestrial species.
Dietary LC50 (bobwhite quail, 8d): >20000 mg/kg. (4)
Dietary LC50 (mallard ducks, 8d): >4640 mg/kg. (4)
Oral LD50 (bee): >0.255 mg/bee - Dermal LD50 (bee): >0.225 mg/be. (6)
Non toxic to bees.
LogPow is 3.65 (5)
Risk of bioaccumulation in an aquatic species is high.
ENVIRONMENTAL FATE, DISTRIBUTION AND PERSISTENCE
Decomposed by soil microorganisms. Residual activity may be found in soil for up to 10 weeks. (4)
MCPA:
AQUATIC TOXICITY
Harmful to aquatic organims.
96hr LC50 (rainbow trout): 232 mg/L. (6)
EC50 (daphnia magna): >100 mg/L. (2)
TERRESTIAL TOXICITY
Harmful to terrestrial species.
Oral LD50 (bobwhite quail): 377 mg/kg. (2)
Oral LD50 (bee): 0.104 mg/bee. (6)
Harmful to bees.
LogPow is 2.75 (pH1), 0.46 (pH5).
Risk of bioaccumulation in an aquatic species is low.

13. DISPOSAL CONSIDERATIONS

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

15. REGULATORY INFORMATION

Not classified as hazardous according to criteria of Worksafe Australia.

Poisons Schedule (Aust)/Toxic Substance (NZ): S5

16. OTHER INFORMATION

Literary reference

(1) In 'Handbook of Poisoning. 12th Ed. Eds. Dreisbach RH and Robertson WO. Appleton & Lange, California, 1987, p106, 126.
(2) Material Safety Data Sheet - MCPA acid tech (CDS 17500) Orica Australia Pty Ltd. 03/97
(3) In 'Handbook of Pesticide Toxicology. Vol 2. Eds. Hayes WJ Jr and Laws ER Jr. Academic Press Inc, 1991, p1332-1336.
(4) Material Safety Data Sheet - Terbutryn (CDS 11753) Orica Australia Pty Ltd. 05/95
(6) ADI List, Commonwealth Department of Health and Family Services. 05/98
(5) In 'The Pesticide Manual. 11th Ed. Ed CDS Tomlin. British Crop Protection Society, 1997, p767-769 & 1170-1172.

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 Personal Protection Requirements.
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.