Material Safety Data Sheet

This material is hazardous according to criteria of NOHSC.
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail.

1. Identification of the substance/preparation and of the company/undertaking

Product Name: **MAGISTER HERBICIDE**

Synonyms: (R) Magister is a Registered Trade Mark of FMC Corporation. MSDS No. FMC/MAG/1

Supplier: FMC (Chemicals) Pty. Limited
ABN: 095 326 891
Street Address: 77 Tingira Street
Pinkenba, Queensland 4008
Australia
Telephone Number: +61 7 3867 9100
Facsimile: +61 7 3867 9110

Emergency Telephone: **1 800 033 111 (ALL HOURS)**

2. Composition/information on ingredients

Product Description: Herbicide.
Straw coloured liquid with a solvent odour.

Xylene 1330-20-7	1-9%	R10 R20/21 R38
Ethyl benzene 100-41-4	1-9%	R11 R20
Solvent naphtha (petroleum), light arom. 64742-95-6	10-29%	R65
n-Butyl alcohol 71-36-3	1-9%	R20
1,2,4-Trimethylbenzene 95-63-6	10-29%	R10 R20 R36/37/38
Clomazone 81777-89-1	47% (480 g/L)	R20/22

3. Hazards identification

Risk Phrases: Flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes.
Harmful: May cause lung damage if swallowed.

Poisons Schedule: S6 Poison.

4. First-aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126; New Zealand 03 474 7000).

Inhalation: Remove victim from area of 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 patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Get to a hospital or doctor quickly. Seek immediate medical advice.

Skin Contact: If skin contact occurs, remove contaminated clothing and wash skin thoroughly. If irritation occurs seek medical advice.

Eye Contact: If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek medical advice.

Notes to physician: Treat symptomatically.

5. Fire-fighting measures

Specific Hazards: Flammable liquid.

Fire-fighting advice: On burning will emit toxic fumes. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

Suitable Extinguishing Media: 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 contact. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers for disposal.

LARGE SPILLS: Shut off all possible sources of ignition. Wear protective equipment to prevent skin and eye contact. Avoid breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops or waterways has occurred advise emergency services or State Department of Agriculture.

7. Handling and storage

Handling advice: Avoid skin and eye contact and breathing in vapour. Keep out of reach of children.

Storage advice: Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.

8. Exposure controls/personal protection

Occupational Exposure Limits:
No value assigned for this specific material by the National Occupational Health and Safety Commission. However, Exposure Standard(s) for constituent(s):

n-Butyl alcohol: Peak Limitation = 152 mg/m3 (50 ppm), Sk
Ethyl benzene: 8hr TWA = 434 mg/m3 (100 ppm), 15 min STEL = 543 mg/m3 (125 ppm)
Trimethyl benzene: 8hr TWA = 123 mg/m3 (25 ppm)
Xylene (o-, m-, p- isomers): 8hr TWA = 350 mg/m3 (80 ppm), 15 min STEL = 655 mg/m3 (150 ppm)

As published by the National Occupational Health and Safety Commission.

TWA - The time-weighted average airborne concentration 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 this concentration should neither impair the health or, not cause undue discomfort to, nearly all workers.

Peak Limitation - a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.

`Sk' Notice – absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

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. These 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 Control 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/particulate respirator. Keep containers closed when not in use.

Personal Protective Equipment:
Orica Personal Protection Guide No. 1, 1998: H - OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.

MANUFACTURE, PACKAGING AND TRANSPORT: Wear overalls, chemical goggles and impervious gloves. Avoid generating and inhaling dusts. If dust exists, wear dust mask/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 storage or re-use.
PREPARATION AND USE OF PRODUCT: Avoid contact with eyes and skin. Do NOT inhale vapour. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length nitrile gloves and face shield or goggles. When using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow-length nitrile gloves. Wash hands after use. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

9. Physical and chemical properties

Physical state:	Liquid
Colour:	Yellow
Odour:	Solvent
Solubility:	Dispersible in water.
Specific Gravity:	1.025-1.028
Relative Vapour Density (air=1):	N Av
Vapour Pressure (20 °C):	N Av
Flash Point (°C):	40
Flammability Limits (%):	N Av
Autoignition Temperature (°C):	N Av

% Volatile by Weight:	N Av
Solubility in water (g/L):	N Av
Melting Point/Range (°C):	N Av
Boiling Point/Range (°C):	N Av
Decomposition Point (°C):	N Av
Sublimation Point (°C):	N App
pH:	5.1
Viscosity:	N Av
Evaporation Rate:	N Av

Partition Coefficient: LogPow (Clomazone): 2.5

10. Stability and reactivity

Stability: Product is stable for at least 2 years under ambient storage 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 or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion: Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is showing signs of central system depression (like those of drunkeness) there is greater likelihood of the patient breathing in vomit and causing damage to the lungs. Breathing in vomit may lead to aspiration pneumonia (inflammation of the lung).

Eye contact: An eye irritant.

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

Inhalation: Breathing in vapour can result in headaches, dizziness and possible nausea. Breathing in 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:
No information available for the product.

Toxicological Data:
No LD50 data available for the product. However, for constituent(s)

CLOMAZONE:

Oral LD50 (rat):	1,369-2,077 mg/kg.
Dermal LD50 (rabbit):	>2,000 mg/kg.
Inhalation LC50 (rat):	4.8 mg/L.
SKIN:	Non-irritant (rabbit).
EYES:	Non-irritant (rabbit).

Liver enlargement and elevated cholesterol levels have been noted in studies on laboratory animals, where clomazone was ingested in large doses over the life span of the animals.
In studies with laboratory animals, clomazone did not cause reproductive or teratogenic effects or carcinogenicity.
ADI (Acceptable Daily Intake) for humans is 0.1 mg/kg bw/day.

The toxicity of the product may also be attributed to the solvent it contains which may cause central nervous system depression. Additive effects may occur with mixtures of solvents. Some solvents have irritating effects on the eyes and skin.

12. Ecotoxicological information

Avoid contaminating waterways.
For CLOMAZONE:

Environmental fate, persistence and degradation:
Clomazone is degraded in soils under aerobic and anaerobic conditions with half lives rangeing between 1 to 4.5 months depending upon soil conditions.

Aquatic toxicity:
Harmful to aquatic organisms. Risk of bioaccumulation in an aquatic species is low.

Log Octanol/Water Partition Coefficient:	2.5
48hr LC50 (Daphnia magna):	5.2 mg/L.
96hr LC50 (rainbow trout):	19 mg/L.
96hr LC50 (bluegill sunfish):	34 mg/L.

Terrestrial toxicity:	Harmful to terrestrial species.
Oral LD50 (mallard duck):	>2,510 mg/kg.
Dietary LD50 (mallard duck):	>5,620 ppm in diet (8 days).

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.

For 110L CONTAINER: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

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 and Rail.

UN No:	1993
Class-primary	3 Flammable Liquid
Packing Group:	III
Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S. (CONTAINS TRIMETHYL BENZENE, XYLENE, ETHYLBENZENE AND BUTANOL)
Hazchem Code:	3[Y]

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

UN No:	1993
Class-primary:	3 Flammable Liquid

Packing Group: III
Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. (CONTAINS TRIMETHYL BENZENE, XYLENE, ETHYLBENZENE AND BUTANOL)

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: 1993
Class-primary: 3 Flammable Liquid
Packing Group: III
Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. (CONTAINS TRIMETHYL BENZENE, XYLENE, ETHYLBENZENE AND BUTANOL)

15. Regulatory information

Classification: This material is hazardous according to criteria of NOHSC.
Xn: Harmful
Xi: Irritant

Risk Phrase(s):
R10: Flammable.
R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
R36: Irritating to eyes.
R65: Harmful: May cause lung damage if swallowed.

Safety Phrase(s):
S2: Keep out of the reach of children.
S13: Keep away from food, drink and animal foodstuffs.
S23: Do not breathe vapour/mist.
S36/37: Wear suitable protective clothing and gloves.

Poisons Schedule: S6 Poison.

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.

16. Other information

Supplier Material Safety Data Sheet; 1999.
In: 'The Pesticide Manual'. 12th Edition. Ed. CDS Tomlin. British Crop Protection Society, 2000.
ADI List, Commonwealth Department of Health and Family Services. 2001.

Reason(s) for Issue:
First Issue Primary MSDS

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since FMC Corporation cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their FMC Corporation representative or FMC Corporation direct at the contact details on page 1.

FMC Corporation's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.