Gullf Ag Kontroller Selective Herbicide

This product is classified as Hazardous according to the criteria of NOHSC Australia
Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Supplier:	Gullf Ag Pty Ltd
ACN:	103 517 184
Street Address:	103 Ordish Road Dandenong South Victoria 3175
Telephone:	(03) 9768 2803
Facsimile:	(03) 9768 2804
Product Name:	Gullf Ag Kontroller Selective Herbicide
Substance:	MCPA is an aryloxyalkanoic acid dicamba is a benzoic acid derivative

2. HAZARDS IDENTIFICATION

Classified as hazardous according to criteria of Worksafe Australia.
This material is a Scheduled Poison S5 and must be stored, maintained and used in accordance with the relevant regulations.

Risk Phrases:

R22, R38, R41, R36/38. Harmful by swallowed. Irritating to skin. Risk of serious damage to eyes. Irritating to eyes and skin.

Safety Phrases:

S20, S24, S36, S36/37 WHEN USING, DO NOT EAT OR DRINK. Avoid contact with skin. Wear suitable protective clothing. Wear suitable protective clothing and gloves.

SUSDP Classification: S5
ADG Classification: None allocated. Not a dangerous Good.
UN Number: None allocated.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Use: Agricultural herbicide for use as described on the product label.
Appearance: Clear, almost colourless liquid
Odour: Faint phenolic odour

Chemical entity	CAS No	Proportion
MCPA *	94-74-6	34
Dicamba *	1918-00-9	8
other non-hazardous ingredients	secret	16
Water	7732-18-5	to 100%

* Present as dimethylamine salts. Proportion given is for the active ingredient. The salts are present at higher concentrations. CAS numbers are given for un-combined ingredients.
This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non-hazardous ingredients are possible.

4. FIRST AID MEASURES

General Information:

You should call the Poisons Information Centres if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 11 26 from anywhere in Australia and is available at all times. Have this MSDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or Doctor.
Skin Contact: Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 20 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (eg. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
Eye Contact: Quickly and gently, blot or brush away product. Immediately flush the contaminate eye(s) with lukewarm, gently flowing water until the product is removed or until a few minutes after irritation has ceased, while holding the eyelid(s) open. Take care not to rinse contaminate water into the unaffected eye or onto the face. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.
Ingestion: If swallowed do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre on 13 11 26 or call a Doctor.

5. FIRE-FIGHTING MEASURES

Fire and Explosion Hazard: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product may be toxic if inhaled. Take appropriate measures.
Extinguishing Media: Not Combustible. Use extinguishing media suitable to burning materials.
Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash Point:	Does not burn.
Upper Flammability Limit	Does not burn
Lower Flammability Limit:	Does not burn
Autoignition Temperature:	Not applicable - Does not burn
Flammability Class:	Does not burn

6. ACCIDENTAL RELEASE MEASURES

In the event of a major spill, prevent from entering drains or watercourses. Wear full protective chemically resistant clothing including facemask, face shield, gauntlets and self-contained breathing apparatus. See above under Personal Protection regarding Australian Standard relating to personal protective equipment. Suitable materials for protective clothing include, PVC. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. After spill, wash area preventing runoff from entering drains. If significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulators prior to disposal. Thoroughly launder clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

7. HANDLING AND STORAGE

Handling:
Keep exposure of this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under storage should be followed during handling in order too minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.
Storage:
This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this class of poison. Make sure that containers of this product are kept tightly closed. Pressure may build up in sealed containers, so do not seal tightly. Make sure the product does not come in contact with substances listed under “Materials to avoid” in Section 10. Some liquid preparations settle on standing and may require stirring before use. Check packaging – there may be further storage instructions on the label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

The following Australian Standards will provide advice regarding safety clothing and equipment: Respiratory Equipment: AS/NZS 1715, Protective Clothing: AS2161, Industrial Clothing: AS2919, Industrial Eye Protection: AS1336 and AS/NZS 1337, Occupational Protective Footwear: AS/NZS2210.
Exposure limits have not been established by NOHSC for any of the significant ingredients in this product.
The ADI for MCPA is set at 0.01mg/kg/day. The corresponding NOEL is set at 1.1mg/kg/day.
The ADI for dicamba is set at 0.03mg/kg/day. The corresponding NOEL is set at 3mg/kg/day.
ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2002.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dust is minimised.
Eye Protection: Protective glasses or goggles must be worn when this product is being used. Failure to protect your eyes may lead to severe harm to them or to general health. Emergency eye wash facilities must also be available in an area close to where this product is being used.
Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.
Respirator: Usually, no respirator is necessary when using this product. However if you have any doubts consult the Australian Standards mentioned above. Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form / Colour:	Clear, almost colourless liquid
Odour	Faint phenolic odour
Solubility:	Miscible in water
Boiling point:	Boils at about 100^{o}C at 100kPa
Melting/softening point:	Approximately 0^{o}C
Specific gravity:	about 1.12 at 20^{o}C
Vapour pressure:	2.37 kPa at 20^{o}C (water vapour pressure)
Flashpoint:	Not Flammable
Autoignition Temp.:	Not applicable – does not burn
% Volatile by Volume:	40% (water only)
pH:	
Viscosity:	

10. STABILITY AND REACTIVITY

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
Conditions to Avoid: This product should be kept in a cool place, preferably below 30^{o}C. Keep containers and surrounding areas well ventilated. Protect this product from light.
Incompatibilities: Strong oxidising agents.
Fire Decomposition: This product is likely to decompose only after heating to dryness, followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Hydrogen, chloride gas, other compounds of chlorine. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgement, and unconsciousness followed by coma and death.
Polymerisation: This product is unlikely to undergo polymerisation processes.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Inhalation: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.
Skin Contact: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.
Eye Contact: Available data shows that this product is not harmful. However product is a severe eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms such as swelling of eyelids and blurred vision may become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment is likely to cause permanent damage.
Ingestion:
MCPA acid is harmful via ingestion, with reported oral LD50 in rats ranging from 700 to 1160mg/kg and in mice from 550 to 800mg/kg. Symptoms in humans from very high acute exposure could include slurred speech, twitching, jerking and spasms, drooling, low blood pressure, and unconsciousness.

Chronic Toxicity
Chronic Toxicity: Dietary levels of approximately 50 mg/kg/day and 125 mg/kg/day over 7 months caused reduced feeding rates and retarded growth rates in rats. White blood cell counts were not affected, but some reduction in red blood cells counts and haemoglobin did appear to be associated with exposure to MCPA at oral dose levels of approximately 20 mg/kg/day. In the same study, oral doses of approximately 5 mg/kg/day caused increased relative kidney weights, and oral doses of approximately 20 mg/kg/day caused increased relative liver weights. Another study in rats showed no effect on kidneys or liver weights over an unspecified period at oral doses of 60 mg/kg/day, but oral doses of 150 mg/kg/day did cause reversible increases in these weights over a course of 3 months. Very high dermal doses of 500 mg/kg/day caused reduced body weight, and even higher dermal doses of 1000 and 2000 mg/kg/day resulted in increased mortality and observable changes in liver, kidney, spleen and thymus.
Reproductive effects: A two-generation rat study at doses of up to 15 mg/kg/day affected reproductive function. Even smaller amounts of the compound were toxic in the foetuses. Dogs receiving relatively small amounts of MCPA (8 and 16 mg/kg/day) for 13 weeks showed adverse sperm and testes changes. It is unlikely that humans will experience these effects under normal exposure conditions.
Teratogenic effects: Offspring of pregnant rats fed 20 to 125 mg/kg/day of MCPA on days 6 to 15 of gestation, had no birth defects. However, when the ethyl ester form of MCPA was fed to pregnant rats (2 to 100mg/kg/day on days 8 to 15 of gestation), cleft palate, heart defect, and kidney anomalies were observed in the offspring. Mice fed 5 to 100 mg/kg/day of MCPA on days 6 to 15 showed significantly reduced foetal weight and delayed bone development at the highest rate. Teratogenic effects in humans are unlikely at expected exposure levels.
Mutagenic effects: MCPA is reportedly weakly mutagenic to bone marrow and ovarian cells of hamsters, but negative results were reported for other mutagenic tests. It was negative in a bacterial test system (both with and without metabolic activation), negative in spot tests, and negative in host-mediated tests. It produced no detectable increase in chromosomal aberrations in houseflies. Some irregularities occurred in gene transfer during cell division in brewers yeast, although at levels that caused massive cell death. It appears that the compound poses little or no mutagenic risk.
Carcinogenic effect: All available evidence on MCPA indicates that the compound does not cause cancer. Forestry and agricultural workers occupationally exposed to MCPA in Sweden did not show increased cancer incidence.
Organ Toxicity: Target organs identified in animal studies include the liver, kidney, spleen and thymus. Farm worker exposure has resulted in reversible anaemia, muscular weakness, digestive problems and slight liver damage.
Fate in Human and Animals: MCPA is rapidly absorbed and eliminated from mammalian systems. Rats eliminated nearly all of a single dose within 24 hours, mostly through urine with little or no metabolism. In another rat study, three quarters of the dose was eliminated within 2 days. All was gone by the 8 days. Humans excreted about half of a 5 mg dose in the urine within a few days. No residues were found after 5 days. Cattle and sheep fed low to moderate doses of MCPA in the diet for 2 weeks showed no residues from levels less than 18mg/kg/day. The major metabolite of MCPA is 2-metjyl-4-chlorphenol in the free and conjugated form, which is formed in the liver.

12. ECOLOGICAL INFORMATION

Effect on Birds: MCPA is moderately toxic to wild fowl; the LD50 of MCPA in bobwhite quail is 377mg/kg.
Effect on Aquatic Organisms: MCPA is harmful to freshwater fish; LC50 values raging from 117 to 232 mg/L in rainbow trout. MCPA is practically non-toxic to freshwater invertebrates, and estuarine and marine organisms.
Effect on other Organisms: It is non-toxic to bees, with a reported LD50 of 104ug/bee.

Environmental Fate
Breakdown in Soil and Groundwater: MCPA and its formulations are rapidly degraded by soil micro-organisms and it has a low persistence, with a reported field half-life of 14 days to 1 month, depending on soil moisture and soil organic matter. Decreased soil moisture and microbial activity, as well as increased soil organic matter, will prolong the field half-life for MCPA. With less than 10% organic matter in soil, the compound is degraded in 1 day and, with greater than 105 levels in the soil; it takes 3 to 9 days to degrade. The half-life is 5 to 6 days in slightly acidic to slightly alkaline soils. MCPA readily leaches in most soils, but its mobility decreases with increasing organic matter. MCPA and its formulations show little affinity for soil.
Breakdown Water: MCPA is relatively stable to light breakdown, but it can be rapidly broken down by organisms. In sterilised water, it takes about 5 weeks for half of the compound to degrade due to the action of sunlight. In rice paddy water, however, MCPA is almost totally degraded by aquatic micro-organisms in under 2 weeks.
Breakdown in Vegetation: MCPA is readily absorbed and translocated in most plants. It works by concentrating in the actively growing regions of a plant (meristematic tissue), where it interferes with protein synthesis, cell division, and ultimately the growth of non-resistant plants. It is actively broken down in plants, the major metabolite being 2-methyl-4-chlorphenol.
Do not contaminate dams, waterways or streams with this product or used containers. DO NOT use this container for any other purpose. After use, triple rinse container and dispose of safely in an approved manner. The active ingredient readily biodegrades in moist soil at moderate concentrations.

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 500mm 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

Considered non hazardous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail. No special transport conditions are necessary unless required by other regulations.

15. REGULATORY INFORMATION

This material is a Scheduled Poison S5 and must be stored, maintained and used in accordance with the relevant regulations.

16. OTHER INFORMATION

All information contained in this document is as accurate as possible based on information submitted by raw material suppliers. **Gullf Ag Pty Ltd** will not be responsible for any damages that may result from reliance on the information contained herein.

Contact:	Peter Howat	Mobile	0417 921 501
	103 Ordish Road	Phone	61 3 9768 2803
	Dandenong South Vic 3175	Fax	61 3 9768 2804

National Poisons Information Centre: Dial 13 11 26 (from anywhere in Australia)