RAMETREX 410 EC

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **RAMETREX 410 EC**
Other identifier: **Bromoxynil as the octanoate** 100 g/ℓ + **Dicamba** 30 g/ℓ + **MCPA as the iso-octyl ester** 280 g/ℓ
Recommended use: Herbicide
Restrictions on use: Agriculture

Supplier: **Villa Crop Protection (Pty) Ltd.**
Co. Reg. No.: 1992/002474/07
PO Box 10413
Aston Manor, 1630, South Africa
Telephone: (011) 396 2233
Fax: (011) 396 4666
Website: www.villacrop.co.za

Emergency telephone numbers:
24 Hr Transport / Spill emergency no:
(Hazcall24) +27 86 044 4411
(Client: Villa Crop Protection)
Griffon Poison Information Centre +27 82 446 8946
(Client: Villa Crop Protection)
Poisoning Emergency telephone numbers:
Griffon Poison Information Centre +27 82 446 8946
Poisons Information Centre +27 861 555 777

2. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	**Hazard categories**	**H-statements**
Physical		
Flammability	Flammable liquid 4	H227
Health		
Oral	Acute Toxicity 4	H302
Dermal	Acute Toxicity 5	H313
	Skin Irritation 3	H316
	Skin Sensitisation 1B	H317
Eye	Eye Irritation 2B	H320
Inhalation	Acute Toxicity 5	H333
Carcinogenicity	Carcinogenicity 2	H351
Specific Target Organ Toxicity – Single Exposure	Specific Target Organ Toxicity – Single Exposure 3	H335
	Specific Target Organ Toxicity – Single Exposure 3	H336
Reproductive toxicity	Reproductive Toxicity 2	H361d
Aspiration toxicity	Aspiration Toxicity 2	H305
Specific Target Organ (central nervous system) Toxicity - Repeat Exposure	Specific Target Organ (central nervous system) Toxicity - Repeat Exposure 1	H373
Environment		
Aquatic acute	Aquatic acute 1	H400
Aquatic chronic	Aquatic chronic 1	H410

The most important adverse effects:
Physiochemical effects:
Combustible liquid.

Human health effects:
Harmful if swallowed.
May be harmful if swallowed and enters airways.
May be harmful in contact with skin.
Causes mild skin irritation.
May cause an allergic skin reaction.
Causes eye irritation.
May be harmful if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness
Suspected of causing cancer.
Suspected of damaging the unborn child.
May cause damage to organs (central nervous system) through prolonged or repeated exposure.

Label elements:

Signal word: Warning
Hazard statements:
H227: Combustible liquid.
H302: Harmful if swallowed.
H305: May be harmful if swallowed and enters airways.
H313: May be harmful in contact with skin.
H316: Causes mild skin irritation.
H317: May cause an allergic skin reaction.
H320: Causes eye irritation.
H333: May be harmful if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness
H351: Suspected of causing cancer.
H361d: Suspected of damaging the unborn child.
H373: May cause damage to organs (central nervous system) through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:
P203: Obtain, read and follow all safety instructions before use.

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe dust, fume, gas, mist, vapours and spray.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear impervious rubber gloves and chemical safety goggles.
P301+P316: IF SWALLOWED: Get emergency medical help immediately.
P302+P352+P317: IF ON SKIN: Wash with plenty of water and non-abrasive soap. Get medical help.
P304+P317 +P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P318: IF exposed or concerned, get medical advice.
P319: Get medical help if you feel unwell.
P330: Rinse mouth.
P331: Do NOT induce vomiting.
P333+P317: If skin irritation or rash occurs: Get medical help.
P337+P317: If eye irritation persists: Get medical help.
P391: Collect spillage.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P501: Dispose of contents/container in accordance with local regulations.

Special labelling of certain mixtures: None known.
Other hazards: None known.
Toxicity:
Classification according to GHS: Category 4

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture.
Composition:

Chemical Name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Bromoxynil as the octanoate	1689-99-2	10%	Acute Toxicity 4 (H302) Acute Toxicity 3 (H331) Skin Sens. 1 (H317) Repr. 2 (H361d) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Dicamba	1918-00-9	3%	Acute Toxicity 4 (H302) Acute Toxicity 4 (H332) Eye Damage 1 (H318) Specific Target Organ Toxicity – Single Exposure 3 (H335) Aquatic Chronic 3 (H412)
MCPA the iso-octyl ester	94-74-6	28%	Acute Toxicity 4 (H302) Skin Irritation 2 (H315) Eye Damage 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Ethoxylated castor oil	61791-12-6	<10 %	Eye Irritation 2 (H319)
Emulsifier	90194-26-6	<5 %	Skin Irritation 2 (H315) Eye Dam. 1 (H318)
	78-83-1	<5 %	Flam. Liq. 3 (H226) Skin Irritation 2 (H315) Eye Dam. 1 (H318) Specific Target Organ Toxicity – Single Exposure 3 (H335) Specific Target Organ Toxicity - SE 3 (H336)
Aromatic hydrocarbon	64742-94-5	<40 %	Flammable liquid 3 (H226) Carcinogenicity 2 (H351) Aspiration Toxicity 2 (H305) Specific Target Organ Toxicity - Repeat Exposure 1 (H373) Skin Irritation 3 (H316) Aquatic Acute 2 (H401) Aquatic Chronic 2 (H411)

4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any

complaints or symptoms, avoid further exposure. Immediately consult a doctor.
Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs. Treat symptomatically and supportively. Single exposure to vapours is not likely to be hazardous.
Skin:
Remove contaminated clothing and shoes. Gently wipe of excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Seek medical advice if necessary. Persons who become sensitised may require specialised medical management with anti-inflammatory agents.
Eyes: Flush eyes with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. If eye irritation persists, get medical advice.
Ingestion: Unlikely to occur under occupational conditions. In case of deliberate ingestion, have victim rinse mouth thoroughly with water. **Do not induce vomiting.** Give plenty of water to drink (1 to 2 glasses). **Seek medical advice immediately.**
Anticipated acute effects: May be harmful if swallowed and enters airways.
Anticipated delayed effects: Suspected of damaging the unborn child.
Most important symptoms/effects: None known.
Advice to physician: This product contains a phenoxy herbicide. There is no antidote available. Treat symptomatically and supportively. Gastric lavage with activated charcoal is advised.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Carbon dioxide, dry chemical powders, foam and water.
Unsuitable Extinguishing Media: Water jet due to contamination risk. Use a water jet only to cool heated containers.
Specific hazards: Hazardous gases may be released upon combustion.
Special Fire Fighting Procedures: Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Keep upwind. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. Avoid pollution of waterways by run-off from the site.
Personal protective equipment: Wear NIOSH/MSHA approved self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin and eyes. Do not breathe in vapours or spray mist.
Protective equipment: Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.
Emergency procedures: Alert firefighting personnel, evacuate unprotected personnel and animals.
Environmental Precautions: Prevent spilled product from entering sewers, waterways or ground water as the product is classified to be very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into water courses should be immediately reported to the police and the Department of Water/Environmental Affairs.
Methods and Materials for Containment: Contain spilled product by diking area with sand or earth.
Methods and Materials for Clean-up: Cover contained spill with an inert absorbent material such as sand, vermiculite, earth or other appropriate material. Vacuum, scoop, or sweep up material and place the material into a clean, dry, sealable container. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spilled material. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:
Precautions for safe handling: Avoid contact with skin and eyes. **May be harmful if inhaled,** ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.
General occupational hygiene: Practice good hygiene when using this material. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used again.
Storage:
Conditions for safe storage: Store under lock and key in its original container in dry, cool, well-ventilated area. Do not store near heat, open flame, sources of ignition or hot surfaces. Not to be stored next to foodstuffs, feed and water supplies. Keep out of reach of children, uninformed persons and animals. Do not contaminate other pesticides and fertilizers.
Incompatible substances and mixtures: Refer to product label.

Packaging material: Fluorinated plastic containers.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Components	Exposure limits	Type of exposure limit	Source
Bromoxynil as the octanoate	2.3 mg/m3	/	Supplier SDS
Iso-butanol	50 ppm	8 h TWA	OSHA PEL

Engineering Controls: It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.
Personal Protective Equipment: Respiratory Protection: If inhalation is likely to occur (airborne concentrations exceed exposure limits), use a NIOSH approved air-purifying respirator with cartridges/canisters approved for organic vapours.
Hand Protection: The use of chemically protective impervious gloves is recommended to prevent against skin contact with this mixture.
Eye Protection: The use of chemical safety goggles or a face shield is recommended to prevent against eye contact. Contact lenses are not protective eye devices.
Skin and Body Protection: Employee must wear appropriate protective impervious clothing; Rubber boots, hat and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing.
Emergency eyewash: Where there is any possibility that an employee's eyes may be exposed to this substance; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Transparent brown liquid.
Odour: Aromatic hydrocarbon odour.
pH (1 % aqueous dilution): 3.6.
Melting point: Not available.
Freezing Point: Not available.
Boiling Point: Not available.
Flash Point: Not available.
Flammability: Not available.
Upper/lower explosion limits: Not available.
Vapour Pressure (mm Hg): Not available.
Relative Vapour Density: Not available.
Density: 1.053 (22°C ±2).
Solubility: Emulsifies in water.
n-octanol/water partition coefficient: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Not available.

10. STABILITY AND REACTIVITY

Chemical Stability: Product is stable at ambient temperature and pressure, under normal storage and handling conditions.
Storage stability: Stable for up to 2 years when stored in a dry, cool covered warehouse in original, well-labelled containers. Store at low temperature conditions, below 50^{O}C, preferably below 30 ^{O}C and not for prolonged periods in direct sunlight.
Reactivity: None known.
Possibility of Hazardous Reactions: Not available.
Conditions to Avoid: Extreme heat, direct sunlight, exposure to flames or sources of ignition.
Incompatible Materials: Strong alkalis or oxidising agents.
Hazardous Decomposition Products: Combustion may release hazardous fumes.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Based on experimental data:
Oral LD_{50} rat 500 mg/kg.
Dermal LD_{50} rat >2000 mg/kg.
Inhalation LC_{50} (4h) rat > 5.410 mg/L.
Skin Irritation: Causes mild skin irritation.
Eye Irritation: Causes eye irritation.
Skin Sensitization: May cause an allergic skin reaction.
Respiratory Sensitization: Not classified.
Reproductive cell mutagenicity: Not classified.
Carcinogenicity: Suspected of causing cancer.
Reproductive toxicity: Suspected of damaging the unborn child.
Specific target organ toxicity – single exposure:
May cause respiratory irritation.
May cause drowsiness or dizziness
Specific target organ toxicity – repeated exposure: May cause damage to organs (central nervous system) through prolonged or repeated exposure.
Aspiration hazard: May be harmful if swallowed and enters airways.
Chronic Effects (other targets e.g. developmental)**:** Not classified.

POTENTIAL ADVERSE EFFECTS: None known.

12: ECOLOGICAL INFORMATION

This product is considered a marine pollutant.

ECOTOXICITY DATA:

Fish:

(Bromoxynil octanoate)

LC_{50} (96h)	Rainbow trout	0.041 mg/ℓ
	Bluegill sunfish	0.06 mg/ℓ

(Dicamba)

LC_{50} (96h)	Rainbow trout	
	Bluegill sunfish	135 mg/ℓ

(MCPA)

LC_{50} (96h)	Rainbow trout	50-560 mg/ℓ
	Bluegil sunfish	>150 mg/ℓ
	Carp	317 mg/ℓ
	Silverside	220 mg/ℓ

Daphnia:

(Bromoxynil octanoate)

LC_{50} (48h)		0.046 mg/ℓ

(Dicamba)

LC_{50} (48h)		120.7 mg/ℓ

(MCPA)

LC_{50} (48h)		>190 mg/ℓ

Algae:

(Bromoxynil octanoate)

EC_{50} (96h)	*Scenedesmus subspicatus*	1 mg/ℓ
EC_{50} (120h)	*Navicula pelliculosa*	0.043 mg/ℓ
EC_{50} (96h)	*Selenastrum capricorn*	0.22 mg/ℓ

(Dicamba)

LC_{50} (96h)	*Pseudokirchneriella subcapitata*	>3.7 mg/ℓ

(MCPA)

EC_{50}	*Selenastrum capricorn*	>392 mg/ℓ

Other aquatic organisms:

(Bromoxynil octanoate)

LC_{50} (14d)	*Lemna gibba*	>0.073 mg/ℓ

(Dicamba)

EC_{50} (14d)	*Lemna gibba*	>3.8 mg/ℓ

(MCPA)

LC_{50}	*Panaeus duorarum*	231 mg/ℓ

Birds:

(Bromoxynil octanoate)

LD_{50}	Bobwhite quail	170 mg/kg
	Mallard ducks	2350 mg/kg
Sub-acute dietary		
LD_{50}	Bobwhite quail	1315 ppm
	Mallard ducks	2150 ppm

(Dicamba)

LD_{50}	Bobwhite quail	216 mg/kg
	Mallard ducks	1373 mg/kg
Dietary LC_{50} (8d)	Bobwhite quail	
	Mallard ducks	>10 000 mg/kg

(MCPA)

LD_{50}	Bobwhite quail	377 mg/kg
Sub-acute dietary		
LC_{50} (5d)	Bobwhite quail	
	Mallard ducks	>5620 ppm

Bees:

(Bromoxynil octanoate)

LD_{50}(48h, contact) Honeybees	>100 µg/bee
(96h, oral)	>119.8 µg/bee

(Dicamba)

LD_{50} (contact)	>100 µg/bee
(oral)	>100 µg/bee

(MCPA)

LD_{50} (oral, contact)	>200 µg/bee

Worms:

(Bromoxynil octanoate)

LD_{50}	97 mg/kg soil

(Dicamba)

LC_{50} (14d)	>1000 mg/kg soil

(MCPA)

LD_{50} (14d)	*Eisenia foetida*	325 mg/kg dry soil

ENVIRONMENTAL EFFECTS:

(Bromoxynil)

Plants & animals – Metabolism by means of hydrolysis of the ester and nitrile groups, with some debromination.

Persistence and degradability: In lab.: DT_{50} <1d. Degraded by hydrolysis and debromination to less toxic substances such as hydroxybenzoic acid.

Bio-accumulative Potential: Not determined. (incl K_{ow})

Mobility in soil: Not determined.

Other adverse effects: Not determined.

(Dicamba)

Animals – In mammals, rapidly eliminated in the urine, partly as glycine conjugate. Plants – Varies with species. In wheat, major metabolite is 5-hydroxy-2-methoxy-3,6-dichlorobenzoic acid.

Persistence and degradability: Microbial degradation occurs, principal metabolite 3,6-dichlorosalicylic acid. Under rapid metabolism DT_{50} <14d; K_{oc} 242-2930, depending on soil.

Bio-accumulative Potential: Not determined. (incl K_{ow})

Mobility in soil: Not determined.

Other adverse effects: Not determined.

(MCPA)

Animals – Absorbed rapidly and excreted almost exclusively in the urine. Only moderate metabolism and small amount of conjugate formation. Plants – Hydroxylated at the methyl group with formation of 2-hydroxymethyl-4-chlorophenoxyacetic acid.

Persistence and degradability: DT_{50} <7d, after initial lag phase.

Bio-accumulative Potential: Not determined. (incl K_{ow})

Mobility in soil: Not determined.

Other adverse effects: Not determined.

13: DISPOSAL CONSIDERATIONS

Waste: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product into public sewers or where there is any danger of run-off or seepage into water systems.

Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal.
Container: Emptied containers retain product residues. Do not re-use the empty container for any other purpose. Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler (www.croplife.co.za). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages. Observe all labelled safeguards until container is destroyed.

14: TRANSPORT INFORMATION

UN Number: 3082
Road Transport ADR/IRD:
Class: 9
Packaging group: III
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (**MCPA** 280g/ℓ + **Dicamba** 30 g/ℓ + **Bromoxynil** 100g/ℓ).
Maritime Transport IMDG/IMO:
Class: 9
Packaging group: III
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (**MCPA** 280g/ℓ + **Dicamba** 30 g/ℓ + **Bromoxynil** 100g/ℓ).
Marine Pollutant (Y/N): Yes
Air Transport IATA/ICAO:
Class: 9
Packaging group: III
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (**MCPA** 280g/ℓ + **Dicamba** 30 g/ℓ + **Bromoxynil** 100g/ℓ).

Special/Environmental Precautions: None known.
Transport in bulk (according to MARPOL 73/78, Annex II and the IBC code): Not available.

15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:
OHSA 1993 Regulations for Hazardous Chemical Substances.

Relevant information regarding restrictions: None.

EU regulation: Regulation EC1272/2008 (EU-GHS/CLP)

Other national regulations: None.

Chemical Safety Assessment carried out? No

16: OTHER INFORMATION

Packaging: Packed in 1, 5, 10, 20, 25 and 50 litres fluorinated plastic containers, labelled according to South African regulations and guidelines.
Additional H statements (formulants):
H226: Flammable liquid and vapour.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H331: Toxic if inhaled.
H411: Toxic to aquatic life with long lasting effects.
H412: Harmful to aquatic life with long lasting effects.
Disclaimer: The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

END OF DOCUMENT

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For detailed information on revisions, contact the Registration holder.