CLOZONE 480 EC

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **CLOZONE 480 EC**
Other identifier: **Clomazone 480 EC**
Recommended use: Herbicide
Restrictions on use: Agriculture

Supplier: **Villa Crop Protection (Pty) Ltd**
Co. Reg. No.: 1992/002474/07
65 Botes Road, Glen Marais,
Kempton Park, 1619
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**
Health		
Oral	Acute tox 4	H302
Aspiration hazard	Asp. Tox. 1	H304
Dermal	Acute tox 5	H313
	Skin Irrit. 3	H316
Eye	Eye dam 1	H318
Environment		
Aquatic acute	Aquatic acute 1	H400
Aquatic chronic	Aquatic chronic 1	H410

The most important adverse effects:
Physiochemical effects: None known.
Human health effects:
May be harmful if swallowed (Acute tox 4).
May be harmful if in contact with skin (Acute tox 5)
Causes mild skin irritation (Skin Irrit. 3).
Causes serious eye damage (Eye dam 1).
May be fatal if swallowed and enters airways (Asp. Tox. 1).
Label elements:

Signal word: DANGER
Hazard statements:
H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H313: May be harmful in contact with skin.
H316: Causes mild skin irritation.
H318: Causes serious eye damage.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
Precautionary statements:
P332+P317: If skin irritation occurs: get medical help.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear chemical safety goggles.
P301+P316: IF SWALLOWED: Get emergency medical help immediately.
P302+P317: IF ON SKIN: Get medical help.
P305+P354+P338: IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P317: Get medical help.
P330: Rinse mouth.
P331: Do NOT induce vomiting.
P332+P317: If skin irritation occurs: get medical help.
P391: Collect spillage.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local regulations.
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**
Clomazone	81777–89–1	44.44 %	Acute tox 4 (H302) Acute tox 4 (H332) Aquatic acute 1 (H400) Acute chronic 1 (H410)
Calcium n-dodecyl benzenesulfonate	26264-06-2	<20 %	Acute tox 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Aquatic

			Chronic 4 (H413)
solvent Naphtha 100	64742-94-5	< 70%	Asp. Tox. 1 (H304)

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. **Seek medical attention if you feel unwell after inhalation**.
Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists.
Eyes: Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention.**
Ingestion: Seek medical attention or call a poison control centre for treatment advice. Do not induce vomiting unless instructed to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water. **Seek medical attention.**
Anticipated acute effects:
Harmful if swallowed.
May be fatal if swallowed and enters airways.
May be harmful in contact with skin.
Causes mild skin irritation.
Causes serious eye damage.
Anticipated delayed effects: May be fatal if swallowed and enters airways.
Most important symptoms / effects: None known.
Advice to physician: Treat symptomatically and supportively. No specific antidote known.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use carbon dioxide or dry chemical for small fires and water fog or foam for large fires.
Unsuitable Extinguishing Media: High volume water jet. Use a water jet only to cool heated containers.
Specific hazards: On combustion the following gases may be released: Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride (HCl).
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. Remain upwind of fire. 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 eyes. **Do not breathe in spray mist or vapours**. Do NOT induce vomiting. Ventilate area of spill or leak, especially in contained areas.
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. This product is classified as very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately 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. **Do not breathe in spray mist or vapours.** Do NOT induce vomiting. Ensure adequate ventilation during handling and use. Do not inhale spray mist or vapours). 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.
Storage:
Conditions for safe storage: Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original, labelled container, tightly closed in an isolated, dry, cool and well- ventilated area. Do not store near heat, open flame, sources of ignition or hot surfaces. Avoid excess heat. Not to be stored next to foodstuffs, feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.
Incompatible substances and mixtures: Refer to product label.
Packaging material: Fluorinated plastic containers

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration
No occupational exposure limits have been determined for the significant ingredients in this product.
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 OELs 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 used in a poorly ventilated area (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.
Eye Protection: The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.
Skin and Body Protection: Employees 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: Light yellow, Emulsifiable concentrate
Odour: Characteristic odour
Odour threshold:
pH (1% aqueous dilution): 6.8 @ 25 °C.
Melting point: Not available.
Freezing Point: 0 °C.
Boiling Point: Not available.
Flash Point: Not available
Flammability: Flammable
Upper / lower explosion limits:
Vapour Pressure (mm Hg): Not available.
Relative Vapour Density: Not available.
Density / Relative density: 1.087 g/mℓ @ 20 °C..
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: The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °C, preferably below 30 °C, and not for prolonged periods in direct sunlight.
Reactivity: None known.
Possibility of hazardous reactions: Unlikely to occur.
Conditions to avoid: Extreme heat or exposure to flames.
Incompatible materials: Strong oxidizers, strong bases, strong reducing agents.
Hazardous decomposition products: Alcohols. carbon monoxide and carbon dioxide may form under burning conditions or with incomplete combustion.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Calculated according to GHS:

Oral LD_{50} (24h) > 1 500 mg/kg (rat)
Dermal LD_{50} > 3 700 mg/kg (rabbit)
Inhalation LC_{50} (4h) > 9 mg/ℓ (rat)
Skin Irritation: Causes mild skin irritation.
Eye Damage: Causes serious eye damage.
Skin Sensitization: Does not cause skin sensitization.
Respiratory Sensitization: Does not cause respiratory sensitization.
Reproductive cell mutagenicity: Does not cause reproductive cell mutagenicity
Carcinogenicity: Does not cause carcinogenicity.
Reproductive toxicity: Does not reproductive toxicity.

Specific target organ toxicity – single exposure: Does not cause specific target organ toxicity – single exposure.
Specific target organ toxicity – repeated exposure: Does not cause specific target organ toxicity – repeated exposure.
Aspiration hazard: May be fatal if swallowed and enters airways.
Chronic Effects: Not classified.
POTENTIAL ADVERSE EFFECTS:
Inhalation: Harmful if inhaled.
Skin contact: May be harmful in contact with skin. Causes mild skin irritation.
Eye contact: Causes serious eye damage.
Ingestion: Harmful if swallowed.

12. ECOLOGICAL INFORMATION

This product is considered to be very toxic to aquatic life and cause harmful long-lasting effects.

ECOTOXICITY DATA:
Clomazone

Fish:		
LC50 (96 h)	Rainbow trout	>15.5 mg/l
	Bluegill sunfish	>34 mg/l
	Atlantic silversides	6.26 mg/l
Daphnia:		
EC50 (48 h)		12.7 mg/l
Algae:		
EC50 (48 h)	*Navicula pelliclosa*	0.185 mg/l
	Selenastrum capricornutum	4.1 mg/l
Birds:		
Acute oral LD50	Mallard ducks	>2510 mg/kg
	Bobwhite quail	>2510 mg/kg
Dietary LC50 (8 d)	Japanese quail	
	Bobwhite quail and mallard ducks	>5000 mg/kg diet. >5620mg/kg diet.
Bees:		
LD50 contact		>96.6mg/bee
LD50 oral		>87.9 mg/bee
Worms:		
LC50 (14 d)	*Eisenia foetida*	>530 mg/kg.
Other aquatic spp. LC_{50} (96 h)	*Mysid shrimps*	0.57 mg/l
	Eastern oysters	5.3 mg/l

ENVIRONMENTAL EFFECTS
Based on information for active ingredient:
Plants: Metabolism involves hydroxylation of the methylene carbon bridge, the isoxazolidinone ring, and the aromatic ring. Hydroxylation on the methylene position is followed by decomposition to form isoxazolidinone and 2-chlorobenzaldehyde; these metabolites are then oxidised or reduced. Hydroxylated products are conjugated, to yield glucosides and amino acid conjugates.
Persistence and degradability: Not determined.
Bio-accumulative potential: Clomazone is rapidly and extensively absorbed after oral administration (87–100% within 48 h) and rapidly and completely excreted after 7 d; residues in animal tissues are negligible. Clomazone is almost completely metabolised by hydroxylation and oxidation/opening of the 3-isoxazolidone ring.
Mobility in soil: Moderately persistent in soil, DT50 c. 30–135 d. Koc 150–562, suggesting clomazone would be mobile in soil; however, in field trials, it was found not to leach beyond the top 10 cm of soil.
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. The product may be taken to a registered waste disposal site or incineration plant.
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. (Clomazone 480 g/ℓ)
Maritime Transport IMDG/IMO:
Class: 9

Packaging group: III
UN Proper Shipping Name: Environmentally hazardous substance, Liquid, N.O.S. (Clomazone 480 g/ℓ)

Marine Pollutant (Y/N): Y
Air Transport IATA/ICAO:
Class: 9
Packaging group: III
UN Proper Shipping Name: Environmentally hazardous substance, Liquid, N.O.S. (Clomazone 480 g/ℓ)

Special / Environmental Precautions: Wedge drums tightly to avoid movement.
Transport in bulk: Refer to MARPOL 73/78, Annex II and the IBC code.

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 250 and 500ml, 1, 5, 10, 20, 25 Liters in Fluorinated Plastic containers labelled according to South African regulations and guidelines.
Other hazard statements, abbreviations and explanations:
H315: Causes skin irritation.
H413: May cause long lasting harmful effects to aquatic life.
IATA: International Air Transport Association.
IBC: International Bulk Chemical.
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization.
LD_{50} value: The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.
OEL/RL: Occupational exposure limit-recommended limit.
PEL: Permissible Exposure Limits.
TWA: Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.
ST/STEL: Short-term exposure limits.
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.

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For detailed information on revisions, contact the Registration holder.