

ARENA 206 EC

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: ARENA 206 EC
Other identifier: Benfuracarb & Lambda-cyhalothrin 206 EC
Recommended use: Insecticide
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
Health		
Oral	Acute Toxicity 4	H302
Aspiration Hazard	Aspiration Toxicity 1	H304
Dermal	Skin Irritation 3	H316
Eye	Eye Damage 1	H318
Inhalation	Acute Toxicity 3	H331
Reproduction	Reproductive Toxicity 2	H361
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:

Toxic if inhaled.
Harmful if swallowed.
May be fatal if swallowed and enters airways.
Causes mild skin irritation.
Causes serious eye damage.
Suspected of damaging fertility or the unborn child.

Label elements:



Signal word: Danger.

Hazard statements:

H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H316: Causes mild skin irritation.
H318: Causes serious eye damage.
H331: Toxic if inhaled.
H361: Suspected of damaging fertility or the unborn child.
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.
P261: Avoid breathing fumes, mists, vapours or 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 or in a well-ventilated area.
P273: Avoid release into the environment.
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
P301+P304+P316: IF SWALLOWED OR INHALED: Get emergency medical help immediately.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338+P317: IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.
P318: IF exposed or concerned, get medical advice.
P330: Rinse mouth.
P331: Do NOT induce vomiting.
P332+P317: If skin irritation occurs: get medical help.
P391: Collect spillage.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to suitable landfill in accordance with local regulations.

Other hazards:

None known.

Toxicity:

Classification according to GHS: Category 3

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture.

Composition:

Chemical Name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Benfuracarb	82560-54-1	20	Acute Toxicity 4 (H302) Acute Toxicity 3 (H331) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Reproductive Toxicity 2 (H361)
Lambda-cyhalothrin	91465-08-6	0.6	Acute Toxicity 3 (H301) Acute Toxicity 4 (H312) Acute Toxicity 2 (H330) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Calcium dodecylbenzenesulfonate	26264-06-2	< 5 %	Acute Toxicity 4 (H302) Skin Irritation 2 (H315) Eye Damage 1 (H318) Aquatic Chronic 4 (H413)
Tristyryl phenol ethoxylate	99734-09-5	< 10 %	Aquatic Chronic 3 (H412)
Aromatic hydrocarbon	64742-94-5	< 70 %	Aspiration Toxicity 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. IF exposed or concerned, get medical advice.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs. **Seek medical attention immediately.**

Skin: Remove contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap.

Seek medical attention if irritation occurs.

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. **Seek medical attention.**

Ingestion: Do not induce vomiting due to the aromatic solvent. Do not give anything by mouth to an unconscious person. **Obtain medical attention immediately** or call a poison control centre for treatment advice. If the person is alert and respiration is not depressed, rinse mouth thoroughly with water and give large quantity of water to drink. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen.

Anticipated acute effects:

Toxic if inhaled.

Harmful if swallowed.

May be fatal if swallowed and enters airways.

Causes mild skin irritation.

Causes serious eye damage.

Anticipated delayed effects: Suspected of damaging fertility or the unborn child.

Most important symptoms/effects: The first effects of carbamate poisoning may include nasal hyperaemia and watery discharge, chest discomfort, dyspnoea, and wheezing due to increased bronchial secretions and bronchoconstriction. Other systemic effects of carbamate poisoning may begin within a few minutes or several hours of exposure. Symptoms may include nausea, vomiting, diarrhoea, abdominal cramps, headache, vertigo, ocular pain, ciliary muscle spasm, blurring or dimness of vision, miosis or in some cases mydriasis, incoordination, paralysis, paresis, muscle weakness, mood disturbances, lacrimation, salivation, sweating and confusion. In severe cases, there may also be involuntary defecation and urination, bradycardia, hypotension, pulmonary oedema, convulsions, stupor, coma and death from respiratory failure or cardiac arrest.

Advice to physician: The use of sorbitol is not recommended. Activated charcoal is contraindicated in an unprotected airway, a GI tract not anatomically intact, and when charcoal therapy may increase the risk of aspiration of a hydrocarbon-based pesticide. **Do not give morphine, aminophylline, phenothiazines, reserpine, furosemide or ethacrynic acid. Pralidoxime (2-PAM, Protopam) and other oximes are contra-indicated. THEY SHOULD NOT BE USED.**

Antidote: Establish clear airway and tissue oxygenation by aspiration of secretions, and if necessary, by assisted pulmonary ventilation with oxygen. Administer atropine sulphate intravenously, or intramuscularly, if IV injection is not possible. In cases of moderately severe poisoning, administer atropine sulphate, 0.4 to 2.0 mg repeated every 15 minutes, until atropinisation is achieved (tachycardia, flushing, dry mouth, mydriasis). Maintain atropinisation by repeated doses for 2-12 hours, or longer, depending on the severity of poisoning. Severely poisoned individuals may exhibit remarkable tolerance to atropine. Two or more times the dosages suggested above may be needed. Observe treated patients closely at least 24 hours to ensure that symptoms (possibly pulmonary oedema) do not recur as atropinisation wears off. In very severe poisonings, metabolic disposition of

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toxicant may require several hours or days during which atropinisation must be maintained. Markedly lower levels of urinary metabolites indicate that atropine dosage can be tapered off. As dosage is reduced, check the lung bases frequently for rales. If rales are heard or other symptoms return, re-establish atropinisation promptly. Hydrocarbon aspiration may complicate these poisonings. Pulmonary oedema and poor oxygenation in these cases will not respond to atropine and should be treated as a case of acute respiratory distress syndrome.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Extinguish small fires with carbon dioxide, dry powder, foam or water. Water spray can be used for cooling off unaffected stock, but avoid spraying water directly into storage containers due to danger of boil over.

Unsuitable Extinguishing Media: High volume water jet.

Specific hazards: Fire may produce irritating or poisonous vapours, mists or other products of 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. 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 and skin. **Do not breathe in spray mist or vapours.** 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 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 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, earth or silica gel.

Methods and Materials for Clean-up: Cover contained spill with an inert absorbent material such as sand, earth or other appropriate non-combustible 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 (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Open burning or dumping of this material is prohibited. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Operator should not be alone during handling and application of product. Harmful if swallowed and may be fatal if enters airways. Avoid contact with eyes and skin. **Do not inhale spray mist or vapours.** Ensure adequate ventilation during handling and use. Do not handle broken containers without protective equipment. Immediately clean up spills that occur during handling. Keep containers tightly 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. 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

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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: For most well-ventilated conditions, no respiratory protection should be needed. 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: Employee must wear appropriate chemically resistant gloves e.g., nitrile rubber gloves to prevent contact with this mixture.

Eye Protection: Wear a face shield when handling the concentrate and when applying the product. The use of safety goggles is recommended if a face shield is not used.

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 mixture; the employer should provide an eyewash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Red-brown liquid, emulsifiable concentrate.

Odour: Aromatic hydrocarbon odour.

pH: 5.5 – 7.5.

Melting point: Not available.

Freezing Point: Not available.

Boiling Point: Not available.

Flash Point: Not available.

Flammability: Not flammable.

Upper/lower explosion limits: Not available.

Vapour Pressure (mm Hg): Not available.

Relative Vapour Density: Not available.

Density: 1.02 g/cm³ at 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 2 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: None known.

Conditions to Avoid: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

Incompatible Materials: The product is incompatible with strong oxidizers and alkaline materials. Compatibility with plastics can vary, therefore, test prior to use.

Hazardous Decomposition Products: Burning can produce oxides of carbon.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS.

Oral LD₅₀ (24 h) >900 mg/kg (rat).

Dermal LD₅₀ (24 h) >9000 mg/kg (rat).

Inhalation LC₅₀ (4 h) >0.54 mg/l (rat).

Skin Irritation/Corrosion: Causes mild skin irritation.

Eye Damage/Irritation: Causes serious eye damage.

Skin Sensitization: Not classified.

Respiratory Sensitization: Not classified.

Reproductive cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: Suspected of damaging fertility or the unborn child.

Specific target organ toxicity – single exposure: Not classified.

Specific target organ toxicity – repeated exposure: Not classified.

Aspiration hazard: Not classified.

Chronic Effects: Not available.

POTENTIAL ADVERSE EFFECTS:

Inhalation: Toxic if inhaled.

Skin contact: Causes mild skin irritation.

Eye contact: Due to inerts, this product may cause serious damage to eyes.

Ingestion: Harmful if swallowed.

12. ECOLOGICAL INFORMATION

This product is very toxic to aquatic organisms with long lasting effects.

ECOTOXICITY DATA:

Fish:

Benfuracarb

LC ₅₀ (96 h)	Bluegill sunfish	0.82 mg/l
	Rainbow trout	0.083 mg/l
	Carp	0.103 mg/l

Lambda-cyhalothrin

LC ₅₀ (96 h)	Bluegill sunfish	0.21 µg/l
	Rainbow trout	0.36 µg/l
	Channel catfish	0.16 µg/l

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	Zebrafish	0.64 µg/l
	Fathead minnows	0.70 µg/l
Daphnia:		
Benfuracarb		
EC ₅₀ (48 h)		0.0099 mg/l
Lambda-cyhalothrin		
EC ₅₀ (48 h)		0.23 µg/l
Algae:		
Benfuracarb		
EC ₅₀ (72 h)	<i>Pseudokirchneriella subcapitata</i>	>2.2 mg/l
Lambda-cyhalothrin		
E _r C ₅₀ (96 h)	<i>Selenastrum capricornutum</i>	>1.0 mg/l
Birds:		
Benfuracarb		
Acute LD ₅₀	Mallard ducks	19.8 mg/kg
	Bobwhite quail (male)	48.3 mg/kg
	Bobwhite quail (female)	39.9 mg/kg
Dietary LC ₅₀	Bobwhite quail	558 mg/kg diet
	Mallard ducks	195 mg/kg diet
Lambda-cyhalothrin		
Acute oral LD ₅₀	Mallard ducks	>3950 mg/kg
Dietary LC ₅₀	Quail	>5300 mg/kg
Bees:		
Benfuracarb		
Oral LD ₅₀		0.92 µg/bee
Contact LD ₅₀		0.19 µg/bee
Lambda-cyhalothrin		
Oral LD ₅₀		0.909 µg/bee
Contact LD ₅₀		0.038 µg/bee
Worms:		
Benfuracarb		
LC ₅₀ (14 d)	<i>Eisenia fetida</i>	29 mg/kg soil
Lambda-cyhalothrin		
LC ₅₀	<i>Eisenia fetida</i>	>1000 mg/kg soil

ENVIRONMENTAL EFFECTS:

Plants:

Benfuracarb

N-S bond cleavage occurs as the initial step, giving rise to carbofuran, which is subsequently metabolised to 3-hydroxycarbofuran. The principal hydrolytic products are carbofuran phenol and 3-hydroxy- and 3-ketophenol, all present in the form of plant conjugates. See A. K. Tanaka *et al.*, *J. Agric. Food Chem.*,

1985, **33**, 1049 and N. Umetsu *et al.*, *J. Pestic. Sci.*, 1985, **10**, 501.

Lambda-cyhalothrin

For details of metabolism of lambda-cyhalothrin in cotton and soya bean leaves, see D.A. French & J. P. Leahey, *Proc. Br. Crop Prot. Conf. – Pests Dis.*, 1990, **3**, 1029-1034.

Persistence and degradability:

Benfuracarb

DT₅₀ in soil is c. 4–28 hours. Under upland conditions, benfuracarb is decomposed to carbofuran, while under flooded conditions, carbofuran phenol is also found as a major degradation product.

Lambda-cyhalothrin

Rapidly degraded in soil; DT₅₀ under lab. conditions 23-82 d, in the field 6-40 d. Rapid dissipation from water in aquatic systems. DT₅₀ for dissipation from surface waters in lab. Water-sediment systems 5-11 h; in a microcosm, DT₅₀ <3 h. Rapid and extensive degradation of parent compound in aquatic systems; DT₅₀ for degradation in lab. Water-sediment systems 7-15 d; in a microcosm, DT₅₀ <3h, DT₉₀ <3 d.

Bio-accumulative Potential:

Benfuracarb

Log K_{ow} 4.22. In rats, benfuracarb is metabolised rapidly and almost completely excreted in the urine and faeces within 7 days.

Lambda-cyhalothrin

Log K_{ow} 5.5. In rats, following oral administration, the compound is rapidly eliminated in urine and faeces.

Mobility in soil:

Lambda-cyhalothrin

Strongly adsorbed to soil and sediment organic matter, K_{oc} 330 000. Negligible potential for leaching of lambda-cyhalothrin and its degradation products through 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 vapour and 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

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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: 2902
Road Transport ADR/IRD:
Class: 6.1
Packaging group: II
UN Proper Shipping Name: PESTICIDE, LIQUID, TOXIC, N.O.S.
(benfuracarb 200 g/l & lambda-cyhalothrin 6 g/l)

Maritime Transport IMDG/IMO:
Class: 6.1
Packaging group: II
UN Proper Shipping Name: PESTICIDE, LIQUID, TOXIC, N.O.S.
(benfuracarb 200 g/l & lambda-cyhalothrin 6 g/l)

Marine Pollutant (Y/N): Yes, Considered a marine pollutant.

Air transport IATA/ICAO:
Class: 6.1
Packaging group: II
UN Proper Shipping Name: PESTICIDE, LIQUID, TOXIC, N.O.S.
(benfuracarb 200 g/l & lambda-cyhalothrin 6 g/l)

Special/Environmental Precautions: None known.

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:

OHS 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 and 25 litres fluorinated plastic containers, labelled according to South African regulations and guidelines.

Other hazard statements, abbreviations and explanations:

H301: Toxic if swallowed.

H312: Harmful in contact with skin.

H315: Causes skin irritation.

H330: Fatal if inhaled.

H412: Harmful to aquatic life with long-lasting effects.

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.

LD₅₀ 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.

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.