

UNIVERSAL ACTION EC

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: ACTION EC
 Insecticide
UN No.: 2991
Supplier: Universal Crop Protection (Pty) Ltd.
Co. Reg. No.: 1983/008184/07
 PO Box 801,
 Kempton Park, 1620, South Africa
Telephone: (011) 396 2233
Fax: (011) 396 4666
Website: www.villacrop.co.za

Emergency telephone numbers:
24 Hr Transport / Spill emergency no:
 EnviroSure. +27 31 205 4918
 (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
Villa Crop Protection Emergency number:
National Safety, Health and Environmental Manager:
 +27 63 698 0668

2. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Benfuracarb
Chemical Name: ethyl N-[2,3-dihydro-2,2-dimethylbenzofuran-7-yloxy-carbonyl(methyl)aminothio]-N-isopropyl-β-alaninate (IUPAC)
CAS No.: [82560-54-1]
Chemical Family: Carbamate
Chemical Formula: C₂₀H₃₀N₂O₅S (Mol. wt.: 410.5)
Use: Systemic and contact insecticide with stomach and contact action to control various insect pests.
Formulation: Benfuracarb: 200 g/l
 Emulsifiable Concentrate (Liquid)
Hazardous Ingredient:

Inert:	concern:	% present:
benfuracarb,	slight eye irritant	21 %
phenyl sulphonate	severe irritant; corrosive	5 %
xylene	irritant, Flammable	63 %

SYMBOLS: F; Xn; N
RISK-PHASE(S): R11, R26/27/28, R36/38, R50/53

3. HAZARD IDENTIFICATION

Toxicity class:

WHO II

ADI: Not available

Main Hazard:

Benfuracarb is a carbamate compound which inhibits cholinesterase. It is toxic. Contact with skin, inhalation of spray, or swallowing may be fatal.

Fire and explosion hazard:

Product is flammable due to the solvent.

Likely routes of exposure:

Skin and eye contact, ingestion and inhalation.

Ingestion:

Highly toxic by ingestion. Refer point 4 for symptoms.

Inhalation:

Highly toxic by inhalation. Aspiration into lungs may cause chemical pneumonitis. Refer point 4 for symptoms.

Skin contact:

Product is a mild skin irritant. May cause dermatitis through defatting of tissue.

Eye contact:

Product is a mild eye irritant.

4. FIRST AID MEASURES AND PRECAUTIONS

Proper care should be taken during occupational use to avoid any inhalation of spray particles, and to prevent accidental contamination of food products and water. The product is a cholinesterase inhibitor.

The first effects are usually respiratory and may include nasal hyperemia and watery discharge, chest discomfort, dyspnea, and wheezing due to increased bronchial secretions and bronchoconstriction.

Other systemic effects 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, lacrimation, salivation, sweating, and confusion. In severe cases, there may also be involuntary defecation and urination, bradycardia, hypotension, pulmonary oedema, convulsions, coma, and death from respiratory failure or cardiac arrest. Does not accumulate in mammalian tissue and the cholinesterase inhibition reverses rather rapidly. In non-fatal cases, the illness generally lasts less than 24 hours.

Inhalation:

Remove from exposure area to fresh air immediately. If breathing has stopped, give mechanical artificial respiration (not direct mouth-to-mouth). Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Treat symptomatically and supportively. Administration of oxygen should be performed by qualified personnel. Get medical attention immediately.

Skin contact:

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Remove contaminated clothing immediately. Wash contaminated areas with soap and water followed by alcohol. Emergency personnel should wear gloves and avoid contamination. Treat respiratory difficulty with mechanical artificial respiration. Get medical attention immediately.

Eye contact:

Flush eyes immediately with large amounts of gently flowing cold water or normal saline solution, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, get medical attention.

Ingestion:

If person is alert and respiration is not depressed, give syrup of Ipecac followed by water (if vomiting occurs, keep head below hips to prevent aspiration). If consciousness level declines or vomiting has not occurred in 15 minutes empty stomach by gastric lavage with the aid of cuffed endotracheal tube using isotonic saline or 5 % sodium bicarbonate follow with activated charcoal. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen.

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.

Treat symptomatically and supportively. Qualified medical personnel must perform administration of oxygen and gastric lavage. Get medical attention immediately.

Advice to physician:

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 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 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.

5. FIRE FIGHTING MEASURES

Flammable properties:

Flammable: Flash point: 23°C

Fire and explosion hazard:

Fire hazard when exposed to heat or flame. Vapour mixtures may ignite or explode.

Extinguishing agents:

Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray as a fog can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

Fire fighting:

Move containers from fire area if possible. Fight fire from maximum distance. Stay away from storage tank ends. Contain fire control water for later disposal. Do not scatter material, extinguish only if flow can be stopped. Use flooding amounts of water as a fog, solid streams may be ineffective. Cool containers with flooding amounts of water as far a distance as possible. Use water spray to absorb toxic vapours. Avoid inhaling hazardous vapours. Keep upwind.

Special Hazards:

Fire may produce irritating or poisonous vapours, mists or other products of combustion.

Personal protective equipment:

Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus. Contact with the fumes and vapours should be avoided by staying upwind. Clean all clothing before re-use. Severely contaminated clothing cannot be adequately decontaminated, and must be disposed as a hazardous waste. Shower with soap and water after contact with this product.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions:

Do not inhale fumes. Avoid contact with skin, eyes or clothes. Ventilate area of spill or leak, especially confined areas. For personal protection refer Section 8.

Environmental precautions:

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

Occupational spill:

Keep out unprotected persons and animals. Do not touch or walk through spilled material; stop leak if you can do it without risk. Earth all equipment used when handling the product. Avoid runoff of product into sewers, water

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systems, basements or confined areas as it may cause fire/explosion. Vapour-suppressing foam could be used to reduce vapours. Thoroughly wash body areas, which come into contact with the product.

For spills: Use clean, non-sparking tools to collect absorbed material. Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited.

7. HANDLING AND STORAGE REQUIREMENTS

Handling:

Operator should not be alone during handling and application of product. Remove sources of naked flame or sparks. Very toxic by inhalation or if swallowed. Avoid contact with eyes and skin and inhalation of fumes. Avoid exposure to spray. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Store in its original container in isolated, dry, cool (avoid temperatures above 32 °C) and well-ventilated area. Avoid cross contamination with other pesticides and fertilisers. Keep under lock and key out of reach of unauthorised persons, children and animals. Store away from incompatible substances. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

Keep away from naked flames and other sources of ignition. Local regulations should be complied with.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Occupational exposure limits:

No occupational limits established by OSHA, ACGIH or NIOSH.

Engineering control measures:

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Only spark-resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

Respirator:

An approved full-face air-purifying respirator, equipped with organic vapour cartridges or canisters, suitable for protection from mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing (long sleeved cotton overalls, apron, rubber boots, face shield and hat or cap) and equipment to prevent skin contact with the substance.

Gloves:

Employee must wear appropriate chemical resistant protective gloves (PVC or neoprene gloves) to prevent contact with this substance.

Eye protection:

Employee must wear splash-proof safety goggles and face-shield to prevent contact with this substance.

Emergency eye wash: 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:

A light brown coloured liquid with an aromatic solvent odour.

Flammability:

Highly flammable.

Flash point:

23 °C.

Specific gravity:

0.934 ± 0.05 g/ml @ 20 °C.

Solubility in water:

Forms an emulsion in water.

10. STABILITY AND REACTIVITY

Storage stability:

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Stable for up to 2 years under normal warehouse and field conditions. Product hydrolysed rapidly in aqueous alkaline solutions. Avoid heat and sources of ignition.

Stability:

The product is stable. Subjected to hydrolysis and unstable in alkaline media.

Incompatibility:

The product is incompatible with strong oxidizers and alkaline media.

Incompatibility:

The product is incompatible with strong oxidizers and alkaline materials.

Hazardous decomposition:

Product undergoes decomposition at high temperatures and will cause emission of acrid smoke and toxic fumes of phosphorous oxides, carbon oxides and amines.

Thermal decomposition:

Toxic vapours are released when product decomposes on heating.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀ rats:

Technical: 205 mg/kg

Formulation calculated: > 205 mg/kg.

Acute dermal LD₅₀ rats:

Technical: >2000 mg/kg.

Formulation calculated: > 2000 mg/kg.

Inhalation LC₅₀ rats:

Technical: 0.34 mg/l air (4 hours).

Acute skin irritation:

May cause slight to severe irritation and damage. May cause dermatitis through defatting of tissue.

Acute eye irritation:

Slight to severe irritant to the eyes and may cause damage.

Carcinogenicity:

Studies indicated that **Benfuracarb** is not carcinogenic.

Teratogenicity / Reproductive hazard:

Studies indicated that **Benfuracarb** is not teratogenic.

Mutagenicity:

Studies evaluating the mutagenic potential of **Benfuracarb** have all shown the compound to be non-mutagenic.

12. ECOLOGICAL INFORMATION

Degradability:

Product degrades in soil in 4 to 28 hours. Under upland conditions, **Benfuracarb** is decomposed to **Carbofuran**, while under flooded conditions, **Carbofuran** phenol is also found as a major degradation product

Mobility:

Benfuracarb has low mobility in moist soils.

ECOTOXICOLOGY:

Benfuracarb is not expected to bio-accumulate in aquatic organisms.

Birds: Toxic to birds

Oral LD₅₀: hens 92 mg/kg

Fish: Highly toxic to fish and aquatic organisms

LC₅₀ (48 hours): Carp 0.65 mg/l

Daphnia:

EC₅₀ (48 hours): *Daphnia magna* 9.9 µg/l

Bees: Toxic to bees

LD₅₀: 0.16 µg/bee

13. DISPOSAL CONSIDERATION

Pesticide disposal:

Contaminated absorbents, surplus product, etc., should be burned at 1000°C in a high-temperature incinerator with effluent gas scrubbing. Where no incinerator is available, hydrolysis under alkaline conditions (pH 12 or above) is a suitable method to dispose of small quantities of the product. Before disposal of the resultant waste, the material must be analysed to ensure that the active ingredient has been degraded to a safe level. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

Package product wastes:

If container is broken, handle with rubber gloves. Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume equal to a minimum of one third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container. Destroy the emptied containers by perforation and flattening. Bury in an approved dump site. Do not re-use the empty container for any other purpose. Comply with any local legislation applying to disposal.

14. TRANSPORT INFORMATION

UN No.: 2991

Road Transport ADR/IRD:

Class: 6.1 + 3.3

Packing group: II

Shipping name: Carbamate pesticide, liquid, toxic, flammable (**ACTION EC** 200 g/l)

Air Transport ICAO/IATA:

Class: 6.1 + 3.3

Packing group: II

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Shipping name: Carbamate pesticide, liquid, toxic, flammable (**ACTION EC 200 g/l**)

Maritime Transport IMDG/IMO:

Class: 6.1 + 3.3
 Packing group: II
 Shipping name: Carbamate pesticide, liquid, toxic, (**ACTION EC 200 g/l**)

MARINE POLLUTANT

15. REGULATORY INFORMATION

Symbol: F, Xn ; N
 Indication of Danger: Harmful substance, Flammable, Environmentally dangerous substance

Risk phrases:

R 11 Highly flammable.
R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R 36/38 Irritating to eyes and skin.
R 50/53 Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Safety phrases:

S 1/2 Keep locked up and out of reach of children.
S3/9/14 Keep in cool, well-ventilated place away from open flames and sparks.
S23 Do not breathe fumes or vapour.
S24/25 Avoid contact with skin and eyes.
S27/28 After contact with skin, take off immediately all contaminated clothing and wash immediately with plenty of water and non-abrasive soap.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and its container must be disposed of as hazardous waste.
S 61 Avoid release to the environment. Refer to special instructions / Safety data sheets.

16. OTHER INFORMATION

Packing and Labelling

Packed in 1, 5, 10, 20 & 25 litres fluorinated plastic containers and labelled according to the South African regulations and guidelines.

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 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.