



SAFETY DATA SHEET

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: PROFENOPHOS 500 EC
 ACTIVE: **PROFENOPHOS 500g/L**
 REGISTRATION HOLDER: HARVEST CROP SOLUTIONS (PTY) LTD.
 DISTRIBUTOR: HARVEST CHEMICALS (PTY) LTD.
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1. CHEMICAL PRODUCT

Common Name: Profenofos

Chemical Name: O-4-bromo-2-chlorophenyl O-ethyl S-propyl phosphorothioate

CAS No.: 41198-08-7

2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	CAS No.	Content w/v
Profenofos	41198-08-7	≥500
Other ingredients	-----	-----

3. HAZARDS IDENTIFICATION

Toxicity class: WHO - II

Main hazard: Profenofos

Fire and explosion hazard: the media is dry chemical, foam, fine-spray, fog.

PLANT. CULTIVATE. HARVEST

Chemical hazard: -

Ingestion: see section 11

Skin contact: see section 11

Inhalation: see section 11

Carcinogenicity: see section 11

Mutagenicity: see section 11

Neurotoxicity: see section 11

Reproductive / Teratogenicity: see section 11

4. FIRST AID MEASURES

Symptoms of human poisoning:

These are typical of organophosphate pesticides – nausea, diarrhoea, dripping nose and mouth, excessive salivation, stomach cramps, excessive sweating, trembling, loss of muscle co-ordination, muscular twitches, weakness, mental confusion, blurred vision, breathing difficulties, rapid pulse, pin-point pupils.

First aid:

Swallowed: if swallowed, DO NOT induce vomiting. Give a glass of water. If swallowed give one atropine tablet every 5 minutes until dryness of the mouth occurs.

Eye: if product gets in eyes, hold eyes open, flush with running water for at least 15 minutes.

If poisoning occurs give atropine tablets as above.

Skin: if skin contact occurs, remove contaminated clothing and wash affected areas thoroughly with soap and water. If poisoning occurs give atropine tablets as above. Wash contaminated clothing before re-use.

Inhalation: move affected person to fresh air and keep at rest until recovered. If poisoning occurs give atropine tablets as above.

Note to physician: treat as a cholinesterase inhibitor. Atropine sulphate is antidotal.

Handling and storage cautions: Avoid humidity and sunshine. Do not store mixly with foods, seeds and fertilizers. Store in well – ventilated, secure area out of the reach of children and domestic animals thoroughly after handling. Avoid contacting with skin and eyes. Avoid inhalation from mouth or nose.

Protective clothing: goggles or safety glasses, rubber glove, waterproof boots, long – sleeved shirt, long pants and a hat.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: NON-FLAMMABLE, however, it is combustible.

FIRE AND EXPLOSION HAZARDS:

Extinguishing agent:

The media is dry chemical, foam, fine-spray, fog.

Firefighting:

During a fire this product may release smoke and hazardous decomposition products. When fighting a major fire wear structural firefighters uniform. Do not allow fire-water to enter drains.

Special Hazards: none

Personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

General and disposal:

Keep all bystanders away. Wear full length clothing and PVC gloves. Re-position any leaking containers so as to minimise further leakage. Dam and absorb spill with an absorbent material. (e.g. sand or soil). Shovel the absorbed material into drums and top with hydrated lime. Disposal of the absorbed material will depend upon the extent of the spill. For quantities up to 50 L of product bury in a secure landfill site. Decontaminate the spill area with hydrated lime scattered over the spill prior to rinsing off with water.

Personal precautions:

Do not inhale fumes. Ventilate area of spill or leak. Avoid contact with skin, eyes or clothes.

For personal protection see section 8.

7. HANDLING AND STORAGE

Storage:

Store in its original container in isolated, dry, cool and well-ventilated area. Store away from incompatible substances. Keep under lock and key out of reach of unauthorized persons, children and animals. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure potential: swallowing if unlikely under normal conditions of usage. Inhalation of spray mist is a possible route of exposure. Skin uptake is the main route of exposure. Harmful amounts of Profenofos may be absorbed through skin that comes into direct contact with the product.

Engineering control measures:

No special requirements. Product is used outdoors.

PERSONAL PROTECTIVE EQUIPMENT:

Poisonous if absorbed by skin contact or swallowed. Will irritate the eyes and skin. Repeated minor exposure may have a cumulative poisoning effect. Avoid inhaling vapour or spray mist. Obtain an emergency supply of atropine tablets 0.6mg. When opening the container and preparing spray wear:

- a. cotton overalls buttoned to the neck and wrist and a washable hat,
- b. elbow-length PVC gloves and
- c. a face shield.

If clothing becomes contaminated with product, or wet with spray remove clothing immediately. If product or spray gets on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, face shield and contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Liqui

Colour: Green or slightly yellow transparent liquid

Odour: slightly sulfurous

pH value: 3.0-6.0

Solubility In water: Soluble

Stability: Stable at normal temperatures and storage conditions

10. STABILITY AND REACTIVITY

Stability:

Stable for up to 2 years under normal warehouse and field conditions. Stable under the acid conditions, unstable under alkaline conditions.

Incompatibility: -

Hazardous decomposition: -

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:

Rat: 511mg / kg (male)

501mg/kg (female)

Acute skin irritation: Moderate irritation

Note: the active ingredient, Profenofos, can be rapidly absorbed through the skin. Poisoning may occur due to cholinesterase inhibition.

Acute eye irritation: Moderate irritation

Carcinogenicity:

Repeated minor exposure may cause a cumulative poisoning effect due to cholinesterase inhibition. Cholinesterase levels will return to normal a few weeks after exposure is stopped. The hydrocarbon liquid may cause narcosis and central nervous system depression following prolonged over-exposure. Profenofos technical has been extensively tested and no evidence of mutagenic, teratogenic or reproductive effects was obtained. The overall NOEL, based on a 2 year rat dietary study is 0.3 mg/kg/day.

12. ECOLOGICAL AND ECOTOXICOLOGICAL INFORMATION

Data for Profenofos technical:

Birds LC₅₀ (8 d) for bobwhite quail 70-200, Japanese quail >1000, mallard ducks 150-612 ppm.

Fish LC₅₀ (96 h) for rainbow trout 0.08, crucian carp 0.09, bluegill sunfish 0.3 mg/l.

Daphnia EC₅₀ (48 h) 1.06 g/l.

Algae EC₅₀ (72 h) for *Scenedesmus subspicatus* 1.16 mg/l.

Other aquatic spp. Highly toxic to crustaceans.

Bees LD₅₀ (contact, 48 h) 0.102g/bee.

Worms LC₅₀ (14 d) 372 mg/kg.

Environmental Fate:

Animals Rats rapidly excrete 14C-profenofos after oral administration. The predominant metabolic pathway involves stepwise dealkylation and hydrolysis, followed by conjugation.

Plants In cotton, Brussels sprouts and lettuce, the compound is rapidly taken up and metabolised. The overall metabolic pattern indicates degradation to polar metabolites.

Soil/Environment Mean half-life in soil (lab. and field) is c. 1 week.

13. DISPOSAL CONSIDERATIONS

Disposal of empty, used containers:

- a. Triple rinsing or preferably pressure rinsing containers. Add the rinsings to the spray tank. DO NOT dispose of undiluted chemicals on site.
- b. If recycling, replace cap and return clean containers to recycler for designated collection point.
- c. 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

Not available.

15. REGULATORY INFORMATION

Not available.

16. OTHER INFORMATION

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.