

MATERIAL SAFETY DATA SHEET



Nagarjuna Agrichem Limited

Emergency Phone: 040 33605264

Plot No.12-A, 'C' Block, Lakshmi Towers,
Nagarjuna Hills, Punjagutta, Hyderabad- 500082.
Andhra Pradesh, INDIA

PROFENOFOS TECHNICAL

MSDS No.: NACL T 3003

1. Product and Company Identification

Product Name : Profenofos Technical
Chemical Name : (RS)-(O-4-bromo-2-chlorophenyl O-ethyl S-propyl phosphorothioate)
Chemical Class : Organo phosphorus insecticide
Molecular formula : C₁₁H₁₅BrClO₃PS

2. Composition / Information on ingredients

Chemical Name	CAS#	Percent or content (w/w)
Profenofos a.i.	41198-08-7	89.00%
Other ingredients	-	11.00%

3. Health Hazards Identification

Statement of Hazardous Nature : Hazardous according to the criteria of NOHSC

Inhalation : HARMFUL. Tests on rats indicate this product is harmful due to inhalation of the active ingredient.

Ingestion : HARMFUL. Tests on rats indicate this product is harmful following single doses of the active ingredient.

Skin : Non irritant

Eye : Slight irritant

Sensitization : Sensitizer to skin

Poisoning system : No case of human poisoning due to this product is on record. Poisoning symptoms typical of organophosphorus pesticides include nausea, diarrhoea, dripping nose and mouth, excessive salivation, stomach cramps, excessive sweating, trembling, loss of muscle co-ordination, muscular twitches, weakness, mental confusion, and blurred vision, breathing difficulties, rapid pulse and pin-point pupils.

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Chronic exposure : Profenofos technical has been extensively tested in mammals and in test tube systems. No mutagenic, teratogenic or reproductive effects.

4. First Aid Measures

Eyes If product gets in eyes, hold eyes open, flush with running water for atleast 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.

Ingestion If swallowed, do not induce vomiting. Give a glass of water. If swallowed give one atropine tablet every five minutes until dryness of the mouth occurs.

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

Advise to doctor Treat as a cholinesterase inhibitor. Atropine sulphate is antidotal.

5. Fire Fighting Measures

Flash point 124°C

Flammable limits Inflammable

Suitable Extinguishing Media Fine water spray, fog or foam

Fire and Explosion hazard Combustible liquid. Vapours can form mixtures.

6. Accidental Release Measures

In case of spillage it is important to take all steps necessary to:

- Avoid eye and skin contact
- Avoid contamination of waterways
- Shut off all possible sources of ignition. DO NOT SMOKE

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Procedure for spill

- 1) Keep all bystanders away
- 2) Wear full length clothing and PVC gloves
- 3) Re-position any leaking containers so as to minimize further leakage
- 4) Dam and absorb spill with an absorbent material (e.g. sand or soil)
- 5) Shovel the absorbed material into drums and top with hydrated lime
- 6) Disposal of the absorbed material will depend upon the extent of the spill
 - For quantities upto 50 L of product bury in a secure landfill site
 - For quantities greater than 50 L seek advice from the manufacturer (use emergency contact number above) before attempting disposal. Contain in a secure location until disposal method is established.
- 7) Decontaminate the spill area with hydrated lime scattered over the spill prior to rinsing off.

7. Handling and Storage

Store in tightly sealed original containers in a dry secure place away from fertilizers, seed, feed and food.

Store out of direct sunlight. Keep out of reach of children, unauthorized persons and animals. Store and transport according to the requirements for a Class 6.1 dangerous goods and Schedule 6 poison.

8. Exposure Controls/Personal Protection

Poisonous if absorbed by skin contact or swallowed. Will irritate 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 0.6 mg. When opening the container and preparing spray wear:

- Cotton overalls buttoned to the neck and wrist and washable hat
- Elbow-length PVC gloves and
- A face shield

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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 products 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

Appearance	Amber coloured oily liquid or pale yellow liquid
Odour	Garlic like odour
Boiling Point	100°C (1.80 Pa)
K_{ow} logP	4.44
Vapour Pressure	1.24 x 10 ⁻¹ mPa (25°C)
Solubility	In water 28 mg/L (25°C) Readily miscible with most organic solvents
Density/Specific gravity	1.455 (20°C)
Stability	Relatively stable under neutral and slightly acidic conditions.

10. Stability and Reactivity

Chemical Stability	Stable under standard conditions
Hazardous Polymerization	Will not occur
Conditions to avoid	Avoid temperatures above 100°F (60°C)
Incompatibility with other materials	Strong alkalis, amines & oxidizes

11. Toxicological Information

Acute Oral Toxicity	LD ₅₀ (Rats) 358 mg/kg LD ₅₀ (Rabbits) 700 mg/kg
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Acute Dermal Toxicity	LD ₅₀ (Rats) 3300 mg/kg LD ₅₀ (Rabbits) 472 mg/kg
Acute Inhalation	LC ₅₀ (rats): 3.00 mg / L air (4 h)
Eye Irritation	Rabbit: Non-irritant
Skin Irritant	Rabbit: Non-irritant
Skin Sensitization	Guinea pig: Non-sensitizing
Chronic toxicity	Non-mutagenic and Non-carcinogenic

12. Ecological Information

Birds	Acute oral LC ₅₀ (8 d, Japanese quail) >1000 mg/kg bw LC ₅₀ (8 d, Bobwhite quail) 70-200 mg/kg diet LC ₅₀ (8 d, mallard ducks) 150-612 mg/kg diet
Fish	LC ₅₀ (96 h) for Rainbow trout 0.08 mg/l, Crucian Carp 0.09 mg/l Bluegill sunfish 0.3 mg/l
Bees	LD ₅₀ (contact, 48 h) 0.102 µg/bee

13. Disposal Considerations

Dispose of empty, used containers by:

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

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 500 mm 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.

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14. Transport Information

Rail/Road (RID/ADR)

Proper Shipping Name : ORGANO PHOSPHORUS PESTICIDE, LIQUID, TOXIC.
Class : 6.1
UN No. : 3018
Packing Group : III

Sea (IMDG – Code)

Proper Shipping Name : ORGANO PHOSPHORUS PESTICIDE, LIQUID, TOXIC.
Class : 6.1
IMDG No. : 3018
Packing Group : III

Air (ICAO/IATA)

Proper Shipping Name : ORGANO PHOSPHORUS PESTICIDE, LIQUID, TOXIC.
Class : 6.1
UN No. : 3018
Packing Group : III

15. Regulatory Information

EU- Classification Hazard Symbol	Xn	Harmful
Special Risks (R-Phrases)	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
Safety Advice (S- Phrases)	S2 S36/37	Keep out of the reach of children Wear suitable protective clothing and gloves.
International WHO Toxicity Classification	II	Moderately toxic

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16. Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.

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