



## MATERIAL SAFETY DATA SHEET

PRODUCT : Profenofos 50% EC

PRODUCT DESIGNATION : Insecticide

### **Section 1. Product & Company Identification**

Common Name : Profenofos

Grade : Formulation

Active Ingredient : Profenofos

Chemical Name of Active : O-4-bromo-2-chlorophenyl O-ethyl S-propyl  
Ingredient (IUPAC) phosphorothioate

Chemical Family of A. I. : Organophosphate

Molecular Formula of A. I. : C<sub>11</sub>H<sub>15</sub>BrClO<sub>3</sub>PS

Molecular Mass of A. I. : 373.6

Manufacturer & Supplier : **M/s PERFECT SOLUTIONS**  
**Office Add:** B-371, Paschim Vihar, New Delhi -  
110063 (India)  
**Factory Add:** 15/1, 15/2, 15/3 Industrial Estate,  
Vidisha - 464001 (M.P)

Telephone Number : +91 8375844625

### **Section 2. Composition / Information on Ingredients**

Name of the Component	Concentration % w/w
Profenofos a.i	50.00% w/w
Other Ingredients	50.00% w/w
Total	100 % w/w



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## Section 3. Hazards Identification

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**Toxicity class:** WHO (a.i.) II; EPA (formulation) II

**Main Hazards:** Profenofos inhibits cholinesterase enzyme activity in the nervous tissue. It is considered harmful. Contact with skin, inhalation of fume or spray, or swallowing may be harmful. Very toxic to fish, daphnia and algae. Very toxic to bees. Toxic to birds.

**Fire and explosion hazard:** Product is flammable due to the solvent.

**Likely routes of exposure:** Skin and eye contact, ingestion and inhalation.

**Eye contact:** Irritating to eyes.

**Skin contact:** Harmful, due to possible absorption. Irritating to skin. May cause sensitization by skin contact.

**Ingestion:** Harmful by ingestion.

**Inhalation:** Harmful by inhalation.

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## Section 4. First Aid Measures

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Profenofos is an organophosphate insecticide. Organophosphorus intoxication results from accumulation of acetylcholine at nerve endings. Symptoms of profenofos intoxication can include headache, nausea, blurred vision, pupillary constriction, tiredness, giddiness, cramps, diarrhoea, discomfort in the chest, nervousness, sweating, tearing, salivation, pulmonary oedema, convulsion, coma. If swallowed and aspirated into the lungs, chemical pneumonia can occur. Depending on severity of poisoning these symptoms become worse with the onset of vomiting, abdominal pain, diarrhoea, sweating and salivation. Confusion, ataxia, slurred speech, loss of reflexes are some of the central nervous system effects may lead to misdiagnosis of acute alcoholism.

**If in Eyes :** Immediately flush with plenty of clean water for 15-20 minutes. Remove contact lenses if present after 5 minutes of washing. Get medical attention

**If on Skin :** Take off contaminated clothing, rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or a doctor

**If Inhaled :** Remove person to fresh air, if required give artificial respiration. Call doctor or poison control centre

**If Swallowed :** Call doctor or poison control centre immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control centre or doctor. Do not give anything by mouth to an unconscious person



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## Section 5. Fire Fighting Measures

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**Hazardous product of Combustion :** On decomposition it may give Ethyl sulphide, Diethyl sulphide and Nitrogen oxides

**Extinguishing Media :** Foam, Dry chemical powder, CO<sub>2</sub> type fire extinguisher or Flood with water. **Unusual Fire and Explosion Hazards :** Exothermic decomposition and violent rupture of containers due to over pressurisation may occur.

**Fire Fighting Equipment :** Evacuate area and fight fire from a safe distance. Approach from upwind to avoid hazardous vapours and decomposition products. Use self-contained breathing apparatus. Used equipments should be thoroughly decontaminated.

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## Section 6. Accidental Release Measures

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**Personal precautions:** Do not inhale fumes. Avoid contact with skin, eyes and clothes. Ventilate area of spill or leak, especially confined areas. For personal protection see 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:** Earth all equipment used when handling the product. Do not touch or walk through spilled material. Stop leak if possible without risk. Avoid runoff of product into sewers, water 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 small spills,** soak up with sand or suitable noncombustible absorbent material, place into containers for subsequent disposal. Use clean, non-sparking tools to collect absorbed material. **For large spills** contact the manufacturer. Contain liquid far ahead of spill. Contain spillage and contaminated water for subsequent disposal. Do not flush spilled material into drains. Keep spectators away and upwind.

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## Section 7. Handling & Storage

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**Handling:** Remove sources of naked flame or sparks. Harmful by absorption, or if swallowed or inhaled. Avoid contact with eyes, prolonged contact with skin, and inhalation of mist and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum,



smoking, or using the toilet. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a nonabrasive 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:** The product must be kept under lock and key. Keep out of reach of unauthorised persons, children and animals. Store in its original labelled container in cool (avoid temperature above 40 OC), well-ventilated dry area, away from heat, sparks and other sources of ignition. Product hydrolyses rapidly in aqueous alkaline solutions. Avoid cross contamination with other pesticides and fertilizers. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

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## Section 8. Exposure Control, Personal Protection

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**Exposure Limit Values :** Not known

**Personal Protection :** When used in a closed / automated system, personal protection equipment may not be required. When closed system is not possible in case of maintenance, repair, sampling etc, systems must be made nonhazardous before opening

**Respiratory Protection :** The product is likely to pose inhalation exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which produces a vapours or mist, workers should put on respiratory protection equipment with a universal filter

**Protective Gloves :** Wear heavy duty natural rubber gloves  
**Eye Protection :** Wear goggles, face shield or safety glasses. It is recommended to have an eye wash fountain available in the work area.

**Skin Protection :** Wear appropriate protective clothing to prevent direct skin contact

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## Section 9. Physical and Chemical Properties

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Appearance / state	:	Appearance: Clear to slightly clear yellowish to light brownish liquid
Colour	:	Appearance: Clear to slightly clear yellowish to light brownish
Odour	:	Pungent, like garlic or cooked onions.



Boiling point	:	142°C
Vapour pressure	:	0.346 mPa at 20°C
Ph	:	4-5
Flash Point		> 48 °C
Density	:	1,130 g/cm <sup>3</sup> ± 0,010
Water Solubility	:	Fully Miscible

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## Section 10. Stability & Reactivity

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**Stability:** Considered stable for a period of 2 years under recommended warehouse and light conditions. See section 7.

**Incompatibility:** Avoid moisture.

**Hazardous decomposition:** Emits toxic fumes under fire conditions. CO, CO<sub>2</sub>, chloride and hydrogen bromide, phosphoric acid and phosphorous pentoxide.

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## Section 11. Toxicological Information

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<b>Acute Oral Toxicity- LD<sub>50</sub></b>	Rat 1500 mg/kg
<b>Acute Dermal Toxicity- LD<sub>50</sub></b>	Rabbit: >2000 mg/kg
<b>Acute Inhalation - LC<sub>50</sub></b>	Rat >8 mg/l (4h)
<b>Eye irritation</b>	Slight Irritating to eyes ( Rabbit)
<b>Skin Irritation</b>	Mild irritating ( Rabbit)
<b>Skin Sensitization</b>	Non skin sensitizer

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## Section 12. Ecological Information

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### ECOTOXICOLOGY:

**Birds:** Highly toxic. LC<sub>50</sub> (8 days): Bobwhite quail: 70 to 200 ppm Mallard duck: 150 to 612 ppm Japanese quail: >1000 ppm

**Fish:** Highly toxic to aquatic organisms. LC<sub>50</sub> (96 hours): Rainbow trout: 0.08 mg/l Bluegill sunfish: 0.3 mg/l Crucian carp: 0.09 mg/l Bees:

**Toxic to bees.** Other: Very toxic to crustaceans, algae and daphnia.



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## Section 13. Disposal Consideration

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If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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## Section 14. Transport Information

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### IMDG Classification

Shipping name	:	Organophosphorus pesticide, liquid, toxic, flammable, (profenofos).
Class	:	6.1
Packing group	:	III
UN number	:	3017
Marine pollutant	:	Yes

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## Section 15. Regulatory Information

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Hazards Symbol	:	Xn
Risk phrases	:	R10,R20/22,R43, R51/53 and R57
Safety phrases	:	S1/2, S13, S20/21, S36/37/39,S29/5

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## Section 16. Other Information

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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 resented 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 on 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 produces formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS. Accordingly, no guarantee or warrantee expressed or implied is made by PERFECT SOLUTIONS, as to the results to be obtained based upon the user's use of the information, nor does PERFECT SOLUTIONS, assume any liability arising out of user's use of the information.

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