

# Terbufos 150

## SAFETY DATA SHEET

### 1. PRODUCT & COMPANY IDENTIFICATION

**Product Name:** Terbufos 150  
**Pesticide Classification:** Insecticide  
**UN No.:** 2783

**Supplier**

Enviro Bio-Chem (Pty) Ltd  
Co. Reg. No.: 2013/194774/07  
44 Kerk Street, Lichtenburg  
North West, South Africa 2740

**Registration Holder**

Erintrade t/a RT Chemicals  
Co. Reg. No.: CK2001/036403/23  
44 Kerk Street, Lichtenburg  
North West, South Africa 2740

**Telephone:** +27 87 231 7261  
**Fax:** 086 541 7948  
**Website:** [www.envirobiochem.co.za](http://www.envirobiochem.co.za)

**24 Hr Emergency Number:** Bateleur: +27 83 123 3911

**In case of Poisoning:**

Poison Information Centre: +27 82 446 8946  
Tygerberg Hospital: (+27 21) 931 6129  
Poison Emergency Enquiries: (+27 21) 689 5227

**Common Name:** Terbufos 150 g/kg GR  
**Chemical Name:** S-tert-butylthiomethyl O,O-diethyl phosphorodithioate (IUPAC)  
**Empirical Formula:** C<sub>9</sub>H<sub>21</sub>O<sub>2</sub>PS<sub>3</sub>  
**CAS No.:** 13071-79-9  
**RSA Reg. No.:** L8119 Act 36 of 1947  
**Namibia Reg. No.:** N-AR 1462

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### 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>Concentration</u>
Terbufos	150 g/kg

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### 3. HAZARD IDENTIFICATION

**Hazard Class:** WHO Class Ib -Highly hazardous.

**Main Hazard:** Extremely toxic if ingested or inhaled.

**Flammability:** The material does not burn or burns with difficulty. Dust-air mixtures are explosive.

**Chemical Hazard:** Repeated exposure may inhibit cholinesterase activity.

**Biological Hazard:** Extremely toxic to aquatic organisms.

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### 4. FIRST AID MEASURES AND PRECAUTIONS

If poisoning is suspected, do not wait for symptoms to develop. Contact a physician, the nearest hospital, or the nearest Poison Control Centre.

**Symptoms of Human Poisoning:** Symptoms include headaches, fatigue, faintness, giddiness, excessive sweating, nausea, abdominal pains, vomiting, diarrhoea, tightness of the chest, anxiety, blurred vision, muscle twitching beginning in the eyelids and tongue, small pupils, respiratory distress, convulsions and coma.

**First Aid Measures:** Persons attending the patient should avoid contact with heavily contaminated clothing and vomitus. Wear rubber gloves while washing pesticide from skin and hair.

**Skin Contact:** Remove contaminated clothing and rinse contaminated body area thoroughly with plenty of soap and cold water. Do not rub skin hard.

**Eye Contact:** Immediately flush eyes with gently flowing cold water for 15 minutes, holding the eyelid(s) open. Seek medical attention immediately.

**Ingestion:** Give the patient 2 glasses of water to drink and induce vomiting by tickling the back part of the throat. Repeat until vomit fluid is clear and free from smell of poison. Keep the patient's airways clear to maintain respiration, particularly when the patient is unconscious or has vomited. Support the jaw and place the patient in a face down position with the head down and turned to one side, with the tongue drawn forward. Administer artificial respiration or closed chest cardiac massage if necessary. Do not apply directly mouth-to-mouth respiration. Never induce vomiting or give anything by mouth to an unconscious person. Immediately take the patient to the nearest physician.

**Inhalation:** Remove patient from source of poisoning to a cool, well ventilated area and keep him/her quiet and reassured. Give oxygen if breathing is difficult. Get medical attention immediately.

**Advice to Physician:** This material contains a cholinesterase inhibitor.

**Antidote:** If there is any sign of cholinesterase inhibition, take atropine sulphate as antidote. 2-PAM can be used together with atropine, but never used alone.

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### 5. FIRE FIGHTING MEASURES

**Flammability:** The material does not burn or burns with difficulty. Dust-air mixtures are explosive.

**Extinguishing Agents:** Use carbon dioxide, dry chemical powders, foam and water.

**Firefighting:** Firefighters and others that may be exposed should wear full protective clothing and self-contained, positive pressure breathing apparatus. Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent pesticide run-off. Conduct firefighting and rescue operations from upwind of the fire area. Evacuate people downwind who may come in contact with smoke, fumes or contaminated surfaces. Do not decontaminate personnel or equipment or handle broken packages or containers without protective equipment. Decontaminate emergency personnel with soap and water before leaving the fire area. Avoid breathing dusts, vapours and fumes from burning materials.

**Special Hazards:** During a fire this product may release smoke and hazardous decomposition products.

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### 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

**Personal Precautions:** Chemical protective clothing usage is advised, i.e. wear neoprene gloves, cotton overalls and safety goggles.

**Environmental Precautions:** Prevent spilled material from entering drains or watercourses. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

**Spills:** Shovel spilled material into covered containers for proper disposal. Decontaminated spill area and tools several times with a solution of 85% water, 10% bleach and 5% isopropyl alcohol. Contain and absorb decontamination solution with inert absorbents (e.g. granular clay) and place the waste into the same disposal container as spilled material. Depending on the quantity released to the environment, notifications to regulatory authorities may be required. If spill is to a water body, immediately notify applicable authorities downstream, so that contingencies can be taken, if necessary. Dispose of product waste according to Section 13 of this document.

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## 7. HANDLING AND STORAGE REQUIREMENTS

**Handling:** Handle all crop protection chemicals with care and caution. Do not eat, drink, smoke or go to the toilet with pesticide-contaminated hands. Always wash hands thoroughly after handling pesticides or waste.

**Storage:** Do not store near sources of sparks, flames or heat. Store in a dry, cool, well-ventilated warehouse in original sealed containers. Not to be stored next to foodstuffs and water supplies. Keep away from children and animals. Local regulation should be complied with.

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## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

**Acceptable Daily Intake (ADI):** No data available.

**Engineering Controls:** It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

### Personal Protective Equipment:

**Clothing:** Long-sleeved shirt, long pants, shoes plus socks, protective waterproof (impermeable) gloves. Employee must wear appropriate protective clothing and equipment to prevent prolonged skin contact with this product. Clothing soaked with product solution should be promptly removed and laundered before re-use.

**Gloves:** Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

**Eye protection:** Wear eye protection. During mixing or pouring operations or other activities in which eye contact with undiluted product is likely to occur, splash goggles should be worn. 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.

**Respirator:** An approved respirator suitable for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

**Other Protection:** Do not eat, drink or smoke while handling this product. Prevent contamination of food, feeds, drinking water and eating utensils. After using this product wash hands and face before eating. Take extreme care to avoid dust. Wash accurately (preferably a shower) after work shift. Wash hands during breaks and at the end of the work with soap and water.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Brown to grey granule.

**Odour:** Mercaptan-like odour.

**Flammability:** Non-flammable

**Explosive Properties:** Dust-air mixtures can be explosive.

**Oxidizing Properties:** No oxidizing properties.

**Bulk Density:** 1 g/ml

**Stability:** Stable for more than 2 years at room temperature. Decomposes on prolonged heating above 120 °C. Hydrolyzed by strong alkalis (PH>9) and acids (PH<2).

## 10. STABILITY AND REACTIVITY

**Stability:** Product is stable for a minimum of 2 years under normal storage conditions.

**Conditions to Avoid:** Avoid excessive heat.

**Incompatible Materials:** Avoid strong oxidizers and strongly alkaline materials.

**Decomposition Products:** Thermal decomposition may produce hydrogen sulphide, mercaptans, and oxides of carbon, phosphorus and sulphur.

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## 11. TOXICOLOGICAL INFORMATION

Acute toxicity based on the active ingredient toxicity.

**Acute Oral LD<sub>50</sub> (rat):** 13 mg/kg. Extremely toxic.

**Acute Dermal LD<sub>50</sub> (rabbit):** 10 mg/kg. Highly toxic by skin application.

**Acute Inhalation LC<sub>50</sub> (rat, 4 hr):** 0.0012 mg/l air. Extremely toxic if inhalation. Airborne Terbufos can be adsorbed through lungs to produce cholinesterase inhibition.

**Skin and Eye Irritation (rabbit):** Irritating to skin and eyes. It may be absorbed through the conjunctiva to produce cholinesterase inhibition.

**Skin Sensitization (guinea pig):** The product causes skin sensitization.

**Chronic Dietary Study:** No data available.

**Carcinogenicity:** Studies did not detect any carcinogenic activity. No human information available.

**Mutagenicity:** Studies did not detect any mutagenic effects. No human information available.

**Teratogenicity:** Studies did not detect any teratogenic effects. No human information available.

**Reproductive Hazard:** No data available.

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## 12. ECOLOGICAL INFORMATION

Ecotoxicity is based on the active ingredient toxicity.

**Aquatic Toxicity Fish LC<sub>50</sub> (96 hr):** 0.77 to 20 ppb (freshwater fish species). Extremely toxic to fish.

**Aquatic Toxicity Daphnia EC<sub>50</sub> (48 hr):** 0.31 ppb. Extremely toxic to daphnia.

**Aquatic Toxicity Algae EC<sub>50</sub> (5 days):** Very toxic to algae.

**Avian Toxicity LD<sub>50</sub> (9 days):** 28.6 mg/kg (bobwhite quail). Extremely toxic to birds.

**Bee Toxicity LD<sub>50</sub>:** Not toxic to bees when used as directed.

**Biodegradability:** Terbufos moves from the soil into plants, where it is broken down rapidly. Little of the parent compound is found in plants. 57 days after seeding and application, the total residues in broccoli were very low, while the marketable heads of broccoli harvested 90 days after seeding held only traces (less than 0.01ppm, fresh weight) of residues. Oxidative and hydrolytic degradation occurs in soil with the half-life of 9 to 27 days.

**Bio-accumulation:** The product does not accumulate.

**Mobility:** Terbufos is generally immobile and is therefore unlikely to leach or contaminate groundwater. Much of chemical can be recovered near the site of application.

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## 13. DISPOSAL CONSIDERATION

**Pesticide Disposal:** To avoid disposal, end users should attempt to utilize the product completely according to label instructions. If this is not possible, handle with care and dispose in a safe manner. This product contains terbufos and can be toxic. Dispose of waste product as hazardous waste via a licensed disposal contractor to an approved landfill or incinerator. The recommended

disposal method for this product is incineration. Do not discharge into drains or sewers. Do not contaminate crops, grazing, rivers or dams with chemical or used containers. Comply with any local legislation applying to waste disposal.

**Package Product Wastes:** Empty containers may retain some product residues. Do not re-use containers. Triple rinse, render container unusable by crushing and/or puncturing and dispose in a safe manner via a licensed disposal contractor to an approved landfill or incinerator. Comply with any local legislation applying to waste disposal.

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## 14. TRANSPORT INFORMATION

**UN No.:** 2783

**Hazard Class:** 6.1

**Packing Group:** II

**Proper Shipping Name:** Organophosphorus Pesticide; Solid; Toxic (contains Terbufos).

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## 15. REGULATORY INFORMATION

**Risk Phrases:** **R26/27/28-** Very toxic by inhalation, in contact with skin and if swallowed.

**R50-** Very toxic to aquatic organisms.

**Safety Phrases:** **S1/2-** Keep locked up and out of reach children.

**S22-** Do not breathe dust.

**S36/37/39-** Wear suitable protective clothing, gloves and eye/face protection.

**S45-** In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**National Legislation:** This product is registered under Act 36 of 1947 of the Republic of South Africa. It is a violation of South African law to use this product in any manner inconsistent with its approved labelling. Read and follow all label directions.

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## 16. OTHER INFORMATION

**Note:** Read and understand all the information on the product label before using the product.

**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.

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