

**IVORYCHEM PTE LIMITED**

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Email: [contact@ivorychem.com](mailto:contact@ivorychem.com)  
Web: [www.ivorychem.com](http://www.ivorychem.com)  
Co. Registration No. 200405572W  
GST Registration No. 200405572W

**MATERIAL SAFETY DATA SHEET****TERMINATOR 50 SC FUNGICIDE**

**Version:** Global  
**Date Approved:**  
**Revision No:** 1

**CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** TERMINATOR 500 SC FUNGICIDE  
**ACTIVE INGREDIENT:** Chlorothalonil  
**CHEMICAL FAMILY:** Chloronitrile  
**MOLECULAR FORMULA:** NA  
**SYNONYMS:** NA

**MANUFACTURER**

IVORYCHEM PTE LTD  
15 Beach Road, #02-09  
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**Emergency Telephone Numbers:**

**Emergency Phone** [contact@ivorychem.com](mailto:contact@ivorychem.com) (Please refer local label for Emergency Numbers in your region).

**COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	CAS #	Wt.%	PEL/TLV	EC No.	EC Class
Chlorothalonil	1897-45-6	50.00	None	None	None
Inert Ingredients		50.00	None	None	None

**HAZARDS IDENTIFICATION****Statement of Hazardous Nature**

This product is classified as: Xi, Irritating. Hazardous according to the criteria of ASCC. Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** R36, R40. Irritating to eyes. Limited evidence of a carcinogenic effect.

**Safety Phrases:** S23, S36, S24/25. Do not breathe spray mists. Wear suitable protective clothing. Avoid contact with skin and eyes.

**SUSDP Classification:** S6

**ADG Classification:** None allocated. Not a Dangerous Good under the ADG Code.

**UN Number:** None allocated



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### FIRST AID MEASURES

#### General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

**Inhalation:** No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

**Skin Contact:** Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

**Eye Contact:** Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

### FIRE FIGHTING MEASURES

**Fire and Explosion Hazards:** There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Extinguishing Media:** Not Combustible. Use extinguishing media suited to burning materials.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade.

**Flash point:** Does not burn.

**Upper Flammability Limit:** Does not burn.

**Lower Flammability Limit:** Does not burn.

**Autoignition temperature:** Not applicable - does not burn.

**Flammability Class:** Does not burn.

### ACCIDENTAL RELEASE MEASURES

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8). Otherwise, not normally necessary. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for



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specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

### HANDLING AND STORAGE

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.  
**Storage:** This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Protect this product from light. Store in the closed original container in a dry, cool, well ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

### EXPOSURE CONTROLS / PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment: Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**. **ASCC Exposure limits TWA (mg/m3) STEL (mg/m3)** Exposure limits have not been established by ASCC for any of the significant ingredients in this product. The ADI for Chlorothalonil is set at 0.01mg/kg/day. The corresponding NOEL is set at 1.5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2005. No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

**Eye Protection:** Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

**Skin Protection:** You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for material types.

**Protective Material Types:** We suggest that protective clothing be made from the following: rubber, PVC.

**Respirator:** Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary. Eyebaths or eyewash stations and safety deluge showers should be provided near to where this



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product is being used.

### PHYSICAL AND CHEMICAL PROPERTIES

**Physical Description & colour:** Thick, whitish, viscous liquid.

**Odour:** Characteristic odour.

**Boiling Point:** Approximately 100°C at 100kPa.

**Freezing/Melting Point:** Approximately 0°C.

**Volatiles:** Water component.

**Vapour Pressure:** 2.37 kPa at 20°C (water vapour pressure).

**Vapour Density:** No data.

**Specific Gravity:** 1.24 approx

**Water Solubility:** Dispersible.

**pH:** 6.5-8.5 (typical)

**Volatility:** No data.

**Odour Threshold:** No data.

**Evaporation Rate:** No data.

**Coeff Oil/water distribution:** No data

**Viscosity:** 800-1600cpa (temperature not given)

### STABILITY AND REACTIVITY

**Reactivity:** This product is unlikely to react or decompose under normal storage conditions.

However, if you have any doubts, contact the supplier for advice on shelf life properties.

**Conditions to Avoid:** Protect this product from light. Store in the closed original container in a dry, cool, well ventilated area out of direct sunlight.

**Incompatibilities:** strong acids, strong bases, strong oxidising agents.

**Fire Decomposition:** This product is likely to decompose only after heating to dryness, followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen.

Occasionally hydrogen cyanide gas in reducing atmospheres. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

**Polymerisation:** This product will not undergo polymerisation reactions.

### TOXICOLOGICAL INFORMATION

**Toxicity:** An information profile for Chlorothalonil is available at <http://extoxnet.orst.edu/pips/ghindex.html>

**Acute toxicity:** Chlorothalonil is not harmful to mammals, but it can cause severe eye and skin irritation in certain formulations. Very high doses may cause a loss of muscle coordination, rapid breathing, nose bleeding, vomiting, hyperactivity, and death. Dermatitis, vaginal bleeding, bright yellow and/or bloody urine, and kidney tumours may also occur. The oral LD50 is greater than 10,000 mg/kg in rats and 6000 mg/kg in mice. The acute dermal LD50 in both albino rabbits and albino rats is 10,000 mg/kg. In albino rabbits, 3 mg of chlorothalonil applied to the eyes caused mild irritation that subsided within 7 days of exposure.

**Chronic toxicity:** In a number of tests of varying lengths of time, rats fed a range of doses of



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chlorothalonil generally showed no effects on physical appearance, behaviour, or survival. Skin contact with chlorothalonil may result in dermatitis or light sensitivity. Human eye and skin irritation is linked to chlorothalonil exposure; 14 of 20 workers exposed to 0.5% chlorothalonil in a wood preservative developed dermatitis. All workers showed swelling and inflammation of the upper eyelids. Allergic skin responses have also been noted in farm workers.

**Reproductive effects:** Studies suggest that chlorothalonil will not affect human reproduction at expected exposure levels.

**Teratogenic effects:** Long-term studies indicate that high doses fed to rats caused reduced weight gains for males and females in each generation studied. A study of birth defects in rabbits showed no effects. Chlorothalonil is not expected to produce birth defects in humans.

**Mutagenic effects:** Mutagenicity studies on various animals, bacteria, and plants indicate that chlorothalonil does not cause any genetic changes. The compound is not expected to pose mutagenic risks to humans.

**Carcinogenic effects:** Based on evidence from animal studies, Chlorothalonil's carcinogenic potential is unclear. Male and female rats fed chlorothalonil daily over a lifetime developed carcinogenic and benign kidney tumours at the higher doses. In another study, where mice were fed high daily doses of chlorothalonil for 2 years, females developed tumours in the fore-stomach area (attributed to irritation by the compound) and males developed carcinogenic and benign kidney tumours.

**Organ toxicity:** Chronic studies of rats and dogs fed high dietary levels show that chlorothalonil is toxic to the kidney. In addition to less urine output, changes in the kidney included enlargement, greenish-brown colour, and development of small grains.

**Fate in humans and animals:** Chlorothalonil is rapidly excreted, primarily unchanged, from the body. It is not stored in animal tissues. Residues have not been found in the tissues or milk of dairy cows fed chlorothalonil.

## ECOLOGICAL INFORMATION

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

**Effects on birds:** Chlorothalonil is practically nontoxic to birds. Most avian wildlife are not significantly affected by this compound.

**Effects on aquatic organisms:** Chlorothalonil and its metabolites are highly toxic to fish, aquatic invertebrates, and marine organisms. Fish, such as rainbow trout, bluegill, and channel catfish are noticeably affected even when chlorothalonil levels are low (less than 1 mg/L). Its bioaccumulation factor is quite low.

**Effects on other organisms:** The compound is nontoxic to bees.

### Environmental Fate:

**Breakdown in soil and groundwater:** Chlorothalonil is moderately persistent. In aerobic soils, the half-life is from 1 to 3 months.

**Breakdown in water:** In very basic water (pH 9.0), about 65% of the chlorothalonil was degraded into two major metabolites after 10 weeks.

**Breakdown in vegetation:** Chlorothalonil's residues may remain on above-ground crops at harvest, but will dissipate over time. Chlorothalonil is a fairly persistent fungicide on plants, depending on the rate of application.



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### DISPOSAL CONSIDERATIONS

Pesticide wastes are toxic. Do not reuse product containers. Dispose of product containers, waste containers and residues according to local health and environmental regulations.

### TRANSPORT INFORMATION

**ADG Code:** This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

### OTHER INFORMATION

Buyer assumes all responsibility for safety and use not in accordance with the product label instructions.