



## **MATERIAL SAFETY DATA SHEET**

### **Manufacturer/information service:**

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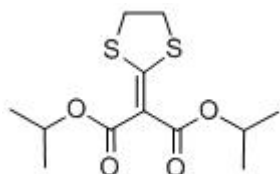
### **1. Chemical Product Identification**

Product Name: Isoprothiolane TC

Molecular Formula: C<sub>12</sub>H<sub>18</sub>O<sub>4</sub>S<sub>2</sub>

Molecular Weight: 290.40 g/mol

Structural Formula:



Chemical Name: diisopropyl 1,3-dithiolan-2-ylidenemalonate

Form: solid

Colour: irritant odor

CAS No.: 50512-35-1

### **2. Composition / Information On Ingredients**

Composition	Chemical name	Content (% w/w)
Active ingredient	Isoprothiolane	95%
Other ingredient	-----	5%

### **3. Hazards Identification**



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**Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Acute toxicity, Oral (Category 4), H302

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Xn, N Harmful, Dangerous for the R22, R51/53

Environment

For the full text of the R-phrases mentioned in this Section, see Section 16.

**Label elements**

**Labelling according Regulation (EC) No 1272/2008**

Pictogram

Signal word      Warning

Hazard statement(s)

H302      Harmful if swallowed.

Precautionary statement(s)      none

Supplemental Hazard      none

Statements

**Other hazards - none**

**4. First Aid Measures**

**Inhalation:**

Move the victim to fresh air or remove source of contamination. Keep person warm and at rest. Assure fresh air breathing. If breathing is difficult, give artificial respiration. Seek medical advice.

**Skin contact:**

Move the victim to fresh air and remove all contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash affected skin areas gently and thoroughly with water and mild soap, followed by warm water rinse. Do not rub the skin. Seek medical attention if ill effect develops.

**Eye contact:**

Check for and remove any contact lenses. Immediately rinse the contaminated eyes with gently flowing clean water for 10 to 15 minutes, occasionally lifting the upper and lower lids. Obtain medical attention if pain, blinking, tears or redness persist.



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**Ingestion:**

Seek medical advice immediately. Do not induce vomiting without medical advice. Rinse mouth with water, only if the person is conscious. Never give anything by mouth to an unconscious person. Seek medical advice and show the label where possible.

**Advice to physician:**

This product contains Isoprothiolane. No antidote is available. Treat symptomatically and supportively.

**5. Fire-Fighting Measures**

**Extinguishing media**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special hazards arising from the substance or mixture**

Carbon oxides, Sulphur oxides

**Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Personal protective equipment:**

Fire-fighters and others that may be exposed should wear full chemical protective clothing, including respiratory protection. See section 8 for recommendations regarding Exposure Controls/Personal Protection. Fire may produce irritating or poisonous vapours (nitrogen oxides, carbon monoxide and carbon dioxide) of combustion.

**6. Accidental Release Measures**

**Personal precautions:**

Do not breathe in mist or fumes. Avoid contact with skin and eyes. For personal protection see Section 8.

**Environmental precautions:**

Do not allow entering drains or watercourses. The product is highly toxic to fish and aquatic species. In case of accidental spill, prevent the material from getting into lakes, rivers and other bodies of water. Isolate discharged material and keep material out of water sources. 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:**



Keep spectators away and upwind. Remove all sources of flames and sparks. Do not touch spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.

**For spills:**

Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Label drums with its content and dispose it in accordance with local regulations. Open burning or dumping of this material is prohibited.

## **7. Handling And Storage**

**Handling procedures:** Wear appropriate protective equipment when handling the product. Do not handle material near food, feed or drinking water. Avoid contact with eyes, prolonged contact with skin, and inhalation of mist and vapour. Use with adequate ventilation. Ventilate confined spaces before entering. No naked lights. No smoking. Do not eat, drink or smoke while working. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the pesticide gets inside. Then wash skin thoroughly using a non-abrasive 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.

**Storing Procedures:** Keep under lock and key and out of reach of unauthorized persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area, away from heat, sparks and other sources of ignition. No smoking is allowed. Protect the product from temperatures below 0°C and above 48°C. Not to be stored next to feeds, food and water supplies. Avoid breaking the containers, spillage or leaks. Comply with the local regulations.

## **8. Exposure Controls/personal protection**

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:**

**Respirator:** Where exposure through inhalation may occur from use, an approved respiratory protection equipment is recommended. Respirator is not required in the case of normal application procedure of the product.

**Clothing:** Wear appropriate chemical-resistant protective clothing or other impervious clothing. Wear boots and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing. Wash clothing after use.

**Gloves:** Wear appropriate chemical-resistant protective gloves whenever the product is handled to prevent contact with this substance. Wash gloves after use.

**Eye protection:** Use safety or chemical goggles or a face shield with safety glasses.

**Emergency eye wash:** Where there is any possibility that an employee's eyes may be exposed to this substance, an eye wash fountain or appropriate alternative within the immediate work area for emergency use, must be provided. Local exhaust and general ventilation must be adequate to meet exposure standards

**9. Physical And Chemical Properties**

Appearance: Yellow powder

Melting point: 54.9°C

Bulk density: 1.04 g/ml

Vapour pressure: 18.8 mPa at 20°C

Henry's law constant:  $1.00 \times 10^{-01}$  at 20°C

Solubility: in water 54 mg/L at 20 °C at pH 8; in organic solvents: methanol 1512 g/L at 20 °C, Ethanol 761 g/L at 20°C, acetone 4061 g/L at 20°C.

Partition coefficient in octanol/water at 20°C: Log P = 3.3

**10. Stability And Reactivity**

**Stability:** Considered stable in unopened original packages, under normal, dry storage conditions. Always perform a compatibility test before using with other products. Do not physically mix concentrate directly with other pesticide concentrates, always dilute first.

**Storage stability:** Stable for 2 years under normal, dry storage conditions. Avoid extremes of temperature; below 0°C and above 48°C.



**Incompatibility:** Oxidizing agents, Keep away from water., Acids and bases, Reducing agents

**Hazardous decomposition products:** Nitrogen oxides, carbon monoxide and carbon dioxide

**Hazardous polymerization:** Will not occur.

## **11. Toxicological Information**

Acute oral LD50 for rats is >300 a.i. mg/kg.

Acute dermal LD50 for rats is >2000 a.i. mg/kg.

Acute inhalation toxicity LC50 (4 h) for rats is >3.23 a.i mg/L.

Skin irritation: Non-irritating to skin (rabbits).

Eye irritation: Slightly irritating to eyes (rabbits).

Skin sensitization for guinea pig: Dermal sensitizer (maximization test).

## **12. Ecological And Ecotoxicological Information**

Effect on birds: Acute oral LD50 for Japanese quail is >4180 a.i.mg/kg.

Effect on fish: Acute LC50 (96 h) for Rainbow trout is 6.8 a.i.mg/l.

Effects on aquatic invertebrates: Acute EC50 (48 h) for Daphnia magna is 62 a.i.mg/l.

Effects on algae: Acute 72 hour EC50 for Pseudokirchneriella subcapitata is 4.58 a.i.mg/l.

Effects on earthworms: Acute 14 day LC50 is >91.95 a.i.mg/kg.

## **13. Disposal Considerations**

**Pesticide disposal:** Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. This product is considered a marine pollutant. Comply with local legislation applying to waste disposal.

**Container disposal:** Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the



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container. Add the rinsings to the contents of the spray tank before destroying the container in the prescribed manner. Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dump site. Do not burn the empty container. Prevent contamination of food, feedstuffs, drinking water and eating utensils. Comply with local legislation applying to waste disposal.

**14. Transport Information**

Not applicable

**15. Regulatory Information**

Not applicable

**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 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 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.