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## Material Safety Data Sheet

### Spirodiclofen

#### Section 1: Chemical Product and Company Identification

**Product Name:** Spirodiclofen

**CAS#:** 148477-71-8

**CI#:** Not available.

**Synonym:**

**Chemical Formula:** C<sub>21</sub>H<sub>24</sub>Cl<sub>2</sub>O<sub>2</sub>

**Contact Information for Emergency:** (0086) 551 65418681

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#### Section 2: Composition and Information on Ingredients

Hazardous Component Name	CAS No.	Concentration % by Weight	
		Minimum	Maximum
Spirodiclofen Technical	148477-71-8	21.6000	23.0000

#### Section 3: Hazards Identification

NOTE: Please refer to Section 11 for detailed toxicological information.

##### Emergency Overview

Caution! Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin, or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

##### Physical State

Viscous Liquid Suspension

**Appearance**

White to Beige

**Routes of Exposure**

Ingestion, Skin Absorption, Skin contact, Eye contact

**Immediate Effects**

**Eye**  
Do not get in eyes. No eye irritation

**Skin**

Harmful if absorbed through skin. May cause sensitisation by skin contact. Mildly toxic

**Ingestion**

Harmful if swallowed. Do not take internally. Mildly toxic

**Chronic or Delayed Long-Term**

This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

**Section 4: First Aid Measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Section 5: Fire and Explosion Data**

**Flash Point**

> 93.3 °C / > 199.9 °F

**Suitable Extinguishing Media**

Water, Dry chemical, Foam

**Fire Fighting Instructions**

Keep out of smoke. Cool closed containers exposed to fire with water spray. Fight fire from upwind position. Wear self-contained breathing apparatus and protective suit. Do not allow run-off from fire fighting to enter drains or water courses. Equipment or materials involved in pesticide fires may become contaminated.

**Section 6: Accidental Release Measures**

**General and Disposal**

Keep unnecessary people away, isolate hazard area and deny entry. Avoid contact with spilled product or contaminated surfaces.

### **Land Spill or Leaks**

Avoid breathing vapors and avoid skin contact. Remove all sources of ignition. Ventilate the area. Use proper protective equipment to minimize personal exposure (see Section 8). Dike contaminated area with absorbent granules, soil, sand, etc. Material should be recovered. Small spills can be absorbed with absorbent granules, spill control pads, or any absorbent material. Carefully sweep up absorbed spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

## **Section 7: Handling and Storage**

### **Handling Procedures**

Handle and open container in a manner as to prevent spillage.

### **Storing Procedures**

Do not contaminate water, food, or feed by storage or disposal.

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

### **Work/Hygienic Procedures**

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. As soon as practical, wash thoroughly and change into clean clothing.

### **Min/Max Storage Temperatures**

Do not transport or store below -10 °C / 14 °F

Do not transport or store above 40 °C / 104 °F

## **Section 8: Exposure Controls/Personal Protection**

### **Engineering Controls**

Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

### **Eye/Face Protection**

Protective eyewear.

### **Hand Protection**

Chemical resistant gloves waterproof gloves

### **Body Protection**

Long-sleeved shirt and long pants. Shoes plus socks.

### **Respiratory Protection**

When respiratory protection is necessary under the conditions of use, wear a respirator approved for pesticides by the National Institute for Occupational Safety and Health (NIOSH).

### **General Protection**

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use

detergent and hot water. Keep and wash PPE separately from other laundry.  
Follow all label instructions. Educate and train employees in safe use of the product.

**Exposure Limits**

This product contains material which are Trade Secret and may have Occupational Exposure Limits. If more information is required, call the product information number listed in Section 1.

**Section 9: Physical and Chemical Properties**

**Appearance:** White to Beige  
**Physical State:** Viscous Liquid Suspension  
**pH:**5 (undiluted)  
**Specific Gravity:** 1.09 at 20 °C  
**Melting/Freezing Point:** -17.8 °C  
**Viscosity:** 700 - 1000 mPa.s 23 °C

**Section 10: Stability and Reactivity Data**

**Chemical Stability:**Stable  
**Hazardous:** Will not occur  
**Polymerization (Conditions to avoid)**

**Section 11: Toxicological Information**

Only acute studies and a couple of mutagenicity studies have been performed on this product as formulated. The non-acute information pertains to the active ingredient, Spirodiclofen Technical.

**Acute Oral Toxicity**

Male/Female Rat: LD50: > 2,000 mg/kg

**Acute Dermal Toxicity**

Male/Female Rat: LD50: > 4,000 mg/kg

**Acute Inhalation Toxicity**

Male/Female Rat: LC50: 4-hr exposure to liquid aerosol: > 3.146 mg/l (actual)

Male/Female Rat: 1-hr exposure to liquid aerosol (extrapolated from 4-hr LC50): > 12.58 mg/l (actual)

**Skin Irritation**

Rabbit: No skin irritation

**Eye Irritation**

Rabbit: No eye irritation

**Sensitization**

Guinea pig: Skin sensitizer.

**Subchronic toxicity**

In a 28-day dermal toxicity study using rats, Spirodiclofen Technical was tolerated without test material-related systemic or local effects at a limit dose of 1000 mg/kg/day. In subchronic toxicity studies using rats, mice and dogs, the principle target organs following administration of Spirodiclofen technical were the adrenals and the liver. At high dose levels, testicular effects were observed in mice and dogs.

### **Chronic toxicity**

In a 1-year toxicity study in dogs, effects observed following administration of Spirodiclofen Technical included evidence of microsomal liver enzyme induction, increased organ weights (adrenal, prostate, testis), and histopathological findings (adrenal, testis). In a 2-year toxicity study in rats treated with Spirodiclofen Technical, effects observed included decreased body weight gains, changes in clinical chemistries, and histopathological findings (jejunum, adrenal, uterus, testis). In an 18-month chronic feeding study in mice treated with Spirodiclofen Technical, findings included organ weight changes (liver, kidney, adrenal, testis) and histopathological findings (liver, adrenal, testis).

### **Assessment Carcinogenicity**

Oncogenicity studies have been conducted on Spirodiclofen Technical using rats and mice. In rats, histopathology revealed an increased incidence of adenocarcinomas in the uterine endometrium and testicular adenomas in animals at the highest dose tested (2500 ppm). In mice, there was an increased combined incidence of hepatocellular adenomas and carcinomas in animals at the mid- and high-dose levels (3500 and 7000 ppm).

**ACGIH** None

**NTP** None

**IARC** None

**OSHA** None

### **Reproductive & Developmental Toxicity**

**REPRODUCTION:** In a two generation study in rats, Spirodiclofen Technical was not a primary reproductive toxicant.

**DEVELOPMENTAL TOXICITY:** In developmental toxicity studies using rats and rabbits, Spirodiclofen Technical was not a primary developmental toxicant.

### **Neurotoxicity**

In an acute oral neurotoxicity screening study, Spirodiclofen Technical did not produce neurotoxicity in any rats treated at a limited dose of 2000 mg/kg. In a subchronic dietary neurotoxicity screening study, Spirodiclofen Technical produced slight neurobehavioral effects without correlating neuropathologic alterations. The neurobehavioral effects were expected to be reversible following the discontinuation of exposure.

### **Mutagenicity**

Envidor 2 SC was non-genotoxic in an Ames test and in an in vitro chromosome aberration test. In vitro and in vivo mutagenicity studies have been conducted on Spirodiclofen Technical, all of which were negative.

## **Section 12: Ecological Information**

### **Environmental Precautions**

This pesticide is toxic to fish and aquatic invertebrates. Avoid direct application or spray drift to water surfaces. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. This product is highly toxic to bees exposed to direct treatment of residues on blooming crops or weeds.

## **Section 13: Disposal Considerations**

### **General Disposal Guidance**

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is

a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal**

Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

**RCRA Classification** Not Regulated under this Statute

**Section 14: Transport Information**

**DOT CLASSIFICATION:** Not regulated for Domestic Surface Transportation

**FREIGHT CLASSIFICATION:** Insecticides or Fungicides, N.O.I., other than poison

**Section 15: Other Regulatory Information**

**US Federal Regulations**

**TSCA list** None

**TSCA 12b export notification** None

**SARA Title III - section 302 - notification and information** None

**SARA Title III - section 313 - toxic chemical release reporting** None

**US States Regulatory Reporting**

**CA Prop65**

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

**US State right-to-know ingredients** None

**Canadian Regulations**

**Canadian Domestic Substance List** None

**Environmental**

**CERCLAN**None

**Clean Water Section 307 Priority Pollutants**

**Section 16: Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

*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.*