

Material Safety Data Sheet

SECTION 1 IDENTIFICATION

GHS Product identifier: Spirodiclofen 98% TC

Other means of identification: /

Chemical name: 3-(2,

4-dichlorophenyl)-2-oxo-1-oxaspiro[4.5]dec-3-en-4-yl)2,2-dimethylbutanoate

Recommended use of the chemical and restrictions on use: This material is a kind of pesticide.

Company / Undertaking Identification

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SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Sensitisation, skin Category 1

Hazardous to the aquatic environment, long-term hazard Category 4

GHS Label elements, including precautionary statements:



Signal word: Warning

Hazard statement(s): May cause an allergic skin reaction. May cause long lasting harmful effects to aquatic life.

Precautionary statement(s):

Prevention:

Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. Avoid release to the environment.

Response:

If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see next). Take off contaminated clothing and wash it before reuse.

Storage: /

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification: /

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Molecular Formula	CAS No.	Concentration%
Spirodiclofen	C ₂₁ H ₂₄ Cl ₂ O ₄	148477-71-8	98.0%

SECTION 4 FIRST AID MEASURES

Description of necessary first aid measures

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 Ingestion: Rinse mouth with water. Consult a physician.

Most important symptoms/effects, acute and delayed: /

Indication of immediate medical attention and special treatment needed, if necessary: /

SECTION 5 FIREFIGHTING MEASURES

Suitable extinguishing media: Use foam, chemical powder, carbon dioxide or water spray.

Special hazards arising from the chemical: This material may decompose and burn at high temperature and fire and release toxic fumes.

Special protective actions for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary. Use water spray to cool unopened containers.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Environmental precautions: Do not enter into spillage area. Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up: Contain spillage, and then collect in a clean container according to local regulations.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling: Wear protective gloves/eye protection/face protection/protective clothing. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from

sources of ignition - No smoking.

Conditions for safe storage, including any incompatibilities: Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from flammable materials and oxidizers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters: /

Appropriate engineering controls: Local exhaust ventilation or a process enclosure ventilation system may be required.

Individual protection measures

Eye/face protection: Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Skin protection: Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber. Impervious clothing,

Respiratory protection: Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant.

Thermal hazards: /

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, colour etc)	Off-white Crystalline powder.
Odour	No characteristic odor
Odour Threshold	N/A
pH	5.0-8.0
Melting point/freezing point	94.8°C
Initial boiling point and boiling range	N/A
Flash point	194.6°C
Evaporation rate	N/A
Flammability (solid, gas)	N/A
Upper/lower flammability or explosive limits	N/A
Vapour pressure	3×10 ⁻⁴ mPa at 20°C (extrapolation) 7×10 ⁻⁴ mPa at 25°C (regression analysis)
Vapour density	N/A
Relative density	1.29 g/cm ³ at 20°C
Solubility(ies)	0.05 mg/L in water at pH 4 In n-heptane 20; polyethylene glycol 24; 1-octanol 44; 2-propanol 47; dimethylsulfoxide 75; acetone, dichloromethane, ethyl acetate, acetonitrile and

Partition coefficient: n-octanol/water	xylene >250 (all in g/L, 20°C).
Auto-ignition temperature	log Kow = 5.83 at pH 4 at 20°C
Decomposition temperature	N/A
Viscosity	N/A

SECTION 10 STABILITY AND REACTIVITY

Reactivity: /
Chemical stability: This material is stable in normal temperature.
Possibility of hazardous reactions: /
Conditions to avoid: Spark, static electricity and high temperature.
Incompatible materials: Flammable materials and oxidizers.
Hazardous decomposition products: Oxycarbides, chlorides, etc.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure: Inhaled, swallowed, skin, eyes.
Symptoms related to the physical, chemical and toxicological characteristics: /
Acute health effects: Accidental ingestion of the material may be harmful and cause cough and throat pain. Oral intake may cause headache, giddiness, vomit and other symptoms. This material may produce skin and eyes irritation.
Chronic health effects: Repeated or prolonged exposure to this material may cause skin allergy.
Numerical measures of toxicity(such as acute toxicity estimates):
Acute Oral Toxicity (Rat) : LD ₅₀ > 2000 mg/kg, Be classified in GHS Category 5.
Acute Dermal Toxicity (Rat) : LD ₅₀ > 2000 mg/kg, Be classified in GHS Category 5.
Acute Inhalation Toxicity (Rat) : LC ₅₀ (4h) > 2.514 mg/L, Be classified in GHS Category 4.
Acute Eyes Irritation (Rabbit) : Non-irritant, Could not be classified according to GHS
Acute Dermal Irritation (Rabbit) : Non-irritant, Could not be classified according to GHS
Skin Sensitization(Guinea Pig) : Non-sensitiser
ADI: 0.01 mg/kg bw

SECTION 12 ECOLOGICAL INFORMATION

Toxicity to Fish :	Acute toxicity for Zebra fish LC ₅₀ (96h) > 0.035 mg a.i/L
Toxicity to Bird:	Acute oral toxicity for Quail LD ₅₀ (7d) > 2000 mg a.i/L·bw
Toxicity to Bee :	Acute oral toxicity LC ₅₀ (48h) > 196 mg a.i/L ; Acute dermal toxicity LD ₅₀ (48h) > 200 µg a.i.bee ⁻¹
Toxicity to Daphnia Magna:	LC ₅₀ (48h) = 3.91 mg a.i./L
Toxicity to Green alga:	EC ₅₀ (72h) = 4.09×10 ⁻² mg a.i/L
Toxicity to Earthworm:	LC ₅₀ (14d) > 1000 mg a.i./kg dry soil
Bioaccumulative potential: /	
Mobility in soil: /	
Other adverse effects: /	

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal methods: Burial in a land-fill specifically licensed to accept chemical. Reuse of broken container is forbidden.

SECTION 14 TRANSPORT INFORMATION

UN number: 3077.

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Transport hazard class(es) : 9.

Packing group, if applicable: III.

Environmental hazards: /

Special precautions for user: /

SECTION 15 REGULATORY INFORMATION

Regulations: This safety data sheet is in compliance with the following national standards: GB 16483-2008, GB 13690-2009, GB/T 15098-2008, GB 18218-2009, GB 15258-2009, GB 6944-2012, GB 190-2009, GB 191-2009, GB 12268-2008, GA 57-1993, GBZ 2-2007 as well as the following national regulations: Dangerous Goods Transport Administrative Regulation [Published by the Ministry of Railways, 2008], Dangerous Chemicals Safety Administrative Regulation [Published by the State Council, 2011].

SECTION 16 OTHER INFORMATION

References	UN Recommendations on the Transport of Dangerous Goods Model Regulations UN Globally Harmonized System of Classification and Labelling of Chemicals
Form Date	16-Aug-2016

Note 1: When products contain two or more hazardous substances, Safety Data Sheets should be prepared based on the risk of the mixture.

Note 2: Manufacturer / supplier should ensure the correctness of the information contained in the safety data sheets, and updated in a timely manner.

Note 3: As a result of product features without the existence of certain information or no data available (such as boiling point does not exist for the solid) in the table with "/" logo.