



SHANGHAI MINGDOU AGROCHEMICAL CO., LTD

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MATERIAL SAFETY DATA SHEET OF CLOPYRALID 97% TECH

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Supplier: SHANGHAI MINGDOU AGOCHEMICAL CO., LTD

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Product name: Clopyralid 97% TECH

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formulation Type: Technical material

Active Ingredients: Clopyralid

Chemical Abstracts name: 3,6-dichloro-2-pyridinecarboxylic acid

IUPAC name: 3,6-dichloropyridine-2-carboxylic acid

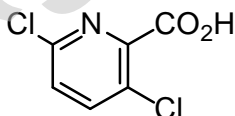
Chemical Family: pyridinecarboxylic acid

CAS NO. 1702-17-6

Molecular Formula: C₆H₃Cl₂NO₂

Molecular Weight: 192.0

Structural Formula:



Other ingredients determined not to be hazardous

INGREDIENT	CAS NO	PROPORTION
Clopyralid	137-26-8	≥97%
other	Not available	≤3%

3. HAZARDS IDENTIFICATION

Emergency overview: Caution. Causes eye injury. Harmful if inhaled or absorbed through skin.

Routes of entry: Inhalation, ingestion, contact with eye and skin.

Health hazards:

Inhalation: Harmful if inhalation.



Eye contact: Irritating to eyes.

Skin contact: Harmful if absorbed through skin.

4. FIRST AID MEASURES

General: Have the product container, label or Material Safety Data Sheet with you when going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

Skin contact: Wash with plenty of soap and water. Get medical attention if irritation persists.

Eye contact: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center for treatment advice.

Ingestion: Call a physician or poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Inhalation: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth to mouth if possible. Call a poison control center or doctor for further treatment advice.

Note to physician: No specific antidote. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash point: No flashing exhibited in ignition test.

Flammable limits:

LFL: Not determined.

UFL: Not determined.

Autoignition temperature: Not determined.

Hazardous combustion products: Likely to decompose by strong heating.

Extinguishing media: Extinguish fire with foam and water spray.

Fire-fighting instructions: Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

Protective equipment for firefighters: When fighting fires involving significant quantities of this product, wear safety boots, non-flammable overalls, gloves, hat, goggles and self contained breathing apparatus. All skin areas should be covered.



6. ACCIDENT RELEASE MEASURES

Personal precautions: Wear suitable protective clothing and eye protection to prevent skin and eye contact.

Method for cleaning up: Absorb small spills with materials such as sand, sawdust, Zorball, or dirt and shovel into an open drum. Wash exposed body areas thoroughly after handling.

7. HANDLING AND STORAGE

Handling: Read the label before use. May irritate eyes. Avoid contact with eyes. Wash hands after use. When using the prepared spray, wear elbow length PVC gloves and face shield or goggles. After each day's use, wash gloves and face shield or goggles.

Storage: Store in tightly closed original container in a dry, cool, well-ventilated area, out of direct sunlight. Do not store near food, feedstuffs, fertilizers or seed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits: No exposure limits have been established for this material.

Engineering controls: Use with appropriate local or general exhaust to maintain exposures below exposure limits.

Personal protective equipment (PPE): When using the prepared spray, wear elbow length PVC gloves and face shield or goggles. After each day's use, wash gloves and face shield or goggles.

User safety recommendations: Will irritate the eyes. Avoid contact with eyes. Wash hands after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White or beige powder.

Vapor pressure: 1.36 mPa (25°C).

Melting point: 151°C-152 °C.

Boiling point: Decomposes before boiling.

Degradation point: 164°C.

Flash point: No flashing exhibited in ignition test.

S.g./density: Approx. 1.57 g/cm³ (20°C).

10. STABILITY AND REACTIVITY

Chemical stability: Stable under normal conditions.

Conditions to avoid: Do not store in exceptionally hot conditions.

Hazardous decompositions products: Combustion or thermal decomposition will evolve toxic and irritant vapours. Carbon dioxide, perhaps monoxide. Nitrogen oxides and chlorine compounds.



Hazardous polymerization: Will not occur.

Incompatible materials: No particular incompatibilities.

Hazardous reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

The following information is for the active ingredient, clopyralid.

Acute toxicity:

Oral: LD₅₀ for male rats 3738, female rats 2675 mg/kg.

Dermal: LD₅₀ for rabbits >2000 mg/kg.

Inhalation: LC₅₀ for rats >0.38 mg/l.

Irritant properties:

Skin: Not a skin irritant

Eye: Eye irritant

Allergenic and sensitizing effects:

Not considered to be a skin sensitizer (Guinea pig).

Chronic toxicity/Carcinogenicity: Chronic studies of laboratory animals have identified effects on the stomach, liver, blood, and body weight. A two-year study with rats found hyperplasia of the stomach lining, an increase in the number of cells leading to an enlargement of the lining, at all but the lowest dose tested. A one-year study with dogs found an increase in liver weights and a decrease in the number of red blood cells, also at all but the lowest dose tested. A two-year study with mice found decreased weight of males at the highest dose tested.

12. ECOLOGICAL INFORMATION

The following information is for the active ingredient, clopyralid.

Ecotoxicity:

Birds Acute oral LD₅₀: for mallard ducks 1465, bobwhite quail >2000 mg/kg.

Dietary LC₅₀ (5 days): for mallard ducks and bobwhite quail >4640 mg/kg diet.

Fish LC₅₀ (96 h): for rainbow trout 103.5, bluegill sunfish 125.4 mg/l.

Daphnia EC₅₀ (48 h): 225 mg/l.

Algae EC₅₀ (96 h): for *Selenastrum capricornutum*, cell count 6.9, cell volume 7.3 mg/l.

Bees Non-toxic to bees.

LD₅₀ (oral): >100 µg/bee.

LD₅₀ (contact): >100 µg/bee.

Earthworm: LC₅₀ (14 days): >1000 mg/kg soil.



Persistence and degradability: In soil and water, clopyralid is degraded primarily by microbial metabolism. It is resistant to degradation by sunlight, hydrolysis, or other chemical degradation. Clopyralid is not highly volatile.

Bioaccumulative potential: BCF (Bio-concentration factor): 1, low potential.

Mobility in soil: Clopyralid is watersoluble, does not bind strongly with soils, and has the potential to be highly mobile in soils, especially sandy soils.

13. DISPOSAL CONSIDERATION

Do not dispose of undiluted chemicals on site. Shred and bury empty containers in a local authority landfill. If no landfill is available, bury the packaging below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty packaging and product should not be burnt.

14. TRANSPORT INFORMATION

UN Number: 3077

UN Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (clopyralid)

Transport hazard class: 9

Packing group: III

15. REGULATORY INFORMATION

Hazard symbols:

Xi Irritant

N Dangerous for the environment

Risk phrases:

R41 Risk of serious damage to eyes.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S30 Never add water to this product

S39 Wear eye/face protection

S61 Avoid release to the environment. Refer to special instructions/safety data sheet

16. OTHER INFORMATION

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and



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consider the information in the context of the how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact the company.

END OF MSDS

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