



MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

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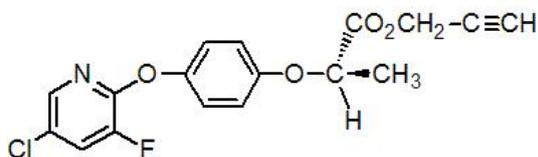
1. Chemical Product Identification

Common Name: Clodinafop-propargyl 95% TC

Molecular Formula: C₁₇H₁₃ClFNO₄

Molecular Weight: 349.8

Structural Formula:



Chemical Name: prop-2-ynyl (R)-2-[4-(5-chloro-3-fluoro-2-pyridyloxy)phenoxy]propionate

Form: Powder

Color: White or off-white

CAS No.: 105512-06-9

2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Clodinafop-propargyl	105512-06-9	95
Other ingredients	---	5

3. Hazards Identification

Health and Environmental: Harmful if inhaled. May be harmful if swallowed or in contact with skin. Irritating to eyes, skin and respiratory system. May cause an allergic skin reaction. Vapors may cause drowsiness and dizziness. May be harmful if swallowed and enters airway.



4. First Aid Measures

Inhalation: Move to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Eyes contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Ingestion: Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Notes to physician: Establish a patent airway with suction where necessary. Watch for signs of respiratory insufficiency and assist ventilation as necessary. Administer oxygen by non-rebreather mask at 10 to 15 L/min. Monitor and treat, where necessary, for pulmonary oedema.

5. Fire-Fighting Measures

Extinguishing media: Foam, dry chemical powder, BCF (where regulations permit), Carbon dioxide.

Fire fighting: Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water courses. Use water delivered as a fine spray to control fire and cool adjacent area. When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

In case of fire: Use appropriate extinguishing media for combustibles in the area. Wear full protective clothing and self-contained breathing apparatus. 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.



6. Accidental Release Measures

In Case of Spill or Leak: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. Handling And Storage

Handling: Always practice good industrial hygiene; handle with care ,avoid personal contact.Do not get into eyes or skin,do not breathe mist or vapor of product.do not swallow.wash hands with soap and water and rinse after handling product.shower after each shift.wash all work clothing and completely clean all PPE after each shift.

Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container. Store in a place accessible by authorized persons only.

8. Exposure Controls/Personal Protection

Personal Protective equipment (PPE):

General: When opening the container, preparing spray wear and using the product wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat, elbow-length butyl rubber gloves and face shield or goggles. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

Respiratory Protection: Generally not required. Use of a respirator may be required in certain circumstances. If an inhalation risk exists, wear a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (Australian Standards).

Personal Hygiene: Clean water should be available for washing in case of eye or skin



contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

9. Physical and Chemical Properties

Appearance: White or off-white powder

pH: 5.0-8.0

Moisture: $\leq 0.5\%$

Insoluble in acetone: $\leq 0.5\%$

Melting point: 59.5°C

Boiling point: 100.6°C

Bulk density: 1.35 g/ml

Partition Coefficient: $\log P = 3.9$ (at pH 7, 20°C)

Vapour pressure: 3.19×10^{-3} mPa (25°C)

Solubility: 4 mg/l in water (20°C); In organic solvents: 500 g/l in acetone, 7.5 g/l in hexane, 500 g/l in ethyl acetate, 21 g/l in octanol (all at 20°C).

10. Stability and Reactivity

Chemical Stability: Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

Conditions to avoid: Do not store for prolonged periods in direct sunlight.

Incompatible materials: Strong acids, strong bases and strong oxidising agents.

Hazardous decomposition products: Product will decompose when burnt and will emit toxic and noxious fumes.

Hazardous reactions: No special considerations. Will not polymerise.

11. Toxicological Information

Acute oral LD50 for rat: 1392 a.i.mg/kg

Acute dermal LD50 for rat: >2000 a.i.mg/kg

Inhalation LC50 (4 h) for rat: >2.32 a.i. mg/L

Skin irritation: Non-irritating to skin (rabbits)

Eye irritation: Non-irritating to eyes (rabbits)

Skin sensitization: Not a skin sensitizer (guinea pigs).



12. Ecological And Ecotoxicological Information

Effect on birds: moderate toxicity to birds, acute oral LD50 for Bobwhite quail is 1363 a.i.mg/kg.

Effect on fish: moderate toxicity to fish, acute 96 hour LC50 for Bluegill sunfish is 0.21 a.i.mg/L.

Effect on aquatic invertebrates: moderate toxicity to aquatic invertebrates, acute 48 hour EC50 for Crassostrea virginica is 0.77 a.i.mg/L.

Effect on algae: moderate toxicity to algae, acute 72 hour EC50 for Scenedemus subspicatus is >1.6 a.i.mg/L.

Effect on honeybees: moderate toxicity to honeybees, contact acute 48 hour LD50 is 40.9 a.i.µg/bee; oral acute 48 hour LD50 is >93.7 a.i.µg/bee.

Effect on earthworms: moderate toxicity to earthworms, acute 14 day LC50 for Eisenia foetida is 197 a.i.mg/kg.

13. Disposal Considerations

Must be dumped or incinerated in accordance with local regulations.

Contaminated packaging: Packs that cannot be cleaned should be disposed of in the same manner as the contents. Contaminated packaging should be emptied as far as possible and disposed of in accordance with official regulations after being thoroughly cleaned.

Uncontaminated packaging may be treated as household waste.

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



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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.