

Safety Data Sheet



Garlon* Ultra Herbicide

*Trademark of Dow AgroSciences LLC

In case of emergency Call CANUTEC at 613 996 6666

1. Product Identification:**Product name:** Garlon* Ultra Herbicide**Product use:** For the control of undesirable woody plants and annual and perennial broadleaved weeds on pastures and rangelands, and in non-crop areas such as rights-of-way, military bases and industrial sites.

Effective Date: February 1, 2008

Product Code:

Supplier:Dow AgroSciences Canada Inc.
Suite 2100, 450 - 1st Street SW,
Calgary, Alberta,
Canada, T2P 5H1www.dowagro.ca

This product is regulated under authority of the Pest Control Products Act

2. Composition:

Component	CAS Number	% (w/w)
Triclopyr (as butoxy ethyl ester)(BEE)	064700-56-7	60.5
Methyl laurate	068937-85-8	39.5
Ethylene glycol monobutyl ether	000111-76-2	0.5

3. Hazard Identification:**Emergency Overview:**

This product is a colorless to yellow liquid with a mild odor. Contact may cause eye and skin irritation and it may be harmful if swallowed. Contact may cause an allergic skin reaction.

Potential Health Effects:**Eyes:** This product may cause slight temporary eye irritation. Corneal injury is unlikely.**Skin contact:** Brief contact may cause severe skin irritation with pain and local redness.

Contact may cause drying or flaking of the skin.

Skin absorption: Prolonged skin contact is not likely to result in this material being absorbed in harmful amounts. Repeated skin contact may result in this product being absorbed in harmful amounts.**Ingestion:** Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.**Inhalation:** Prolonged exposure is not expected to cause adverse effects.**Eyes:** Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses after the first five minutes, then continue rinsing eyes. Get specialist medical attention.**Skin:** Remove contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Get medical attention.**Ingestion:** Get medical attention at once. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless instructed to do so by qualified medical personnel. Get medical attention and transport to a medical facility at once.**Inhalation:** Remove person to fresh air. If individual is not breathing, call an emergency responder or ambulance, and then give artificial respiration; if by mouth-to-mouth, use rescuer protection.

Have the Safety Data Sheet, and if available, the product container or label with you when calling for medical assistance.

Note to physician:

There is no specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire-fighting Measures:**Auto-ignition temperature:** >325°C**Flash point:** >100°C (Closed cup)**Flammability limits:** Not available**4. First - Aid Measures:**

Consult a physician in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention at once.

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Extinguishing media: Use water fog or fine spray, dry chemical, carbon dioxide or foam fire extinguishers. Do not use a direct water stream as this action may spread the fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Sensitivity to mechanical impact/static discharge: Not available

Unusual fire and explosion hazards: Keep people away. Isolate the fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from a protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container(s). Do not use a direct water stream, as this action may spread the fire. Move container(s) from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include but are not limited to nitrogen oxides, hydrogen chloride, carbon monoxide, carbon dioxide and phosgene. Container(s) may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Contain fire-fighting water for future disposal.

Fire-fighting equipment: Use positive-pressure self-contained breathing apparatus and full turnout gear. Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures:

Eliminate all ignition sources. Ventilate the spill area. Avoid breathing the vapor. Soak up small spills with absorbent material such as HAZORB, or ZORBALL, peat moss, commercial sweeping compound or similar absorbent material; if these are not available use adsorbing agents such as kitty litter, sand, clay or topsoil. Store collected absorbed/adsorbed material in secure containers until safe disposal can be arranged. Avoid the use of water for cleanup, since spent water must be collected and may be treated as hazardous waste. Use hot water and heavy duty detergent to clean up any residual stains on hard surfaces. Small spills on topsoil should be worked into the soil and allowed to degrade under natural conditions (see Section 13. Ecological Information – Degradation and Metabolism – Soil). Do not allow spilled material to contaminate water supplies. For large spills, dike and barricade the affected area and contact CANUTEC at 613 996 6666 and local authorities.

7. Handling and Storage:

Handling: Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with this product only with adequate ventilation. Wash thoroughly after handling this product.

Storage: Store this product in a dry place. Store only in original container(s). Keep container(s) tightly closed when not in use. Do not store this product near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls, Personal Protection and Exposure limits:

Exposure guidelines:

Triclopyr BEE ester: Dow Industrial Hygiene Guide is 2 mg/m³ TWA, as acid equivalent, skin.

Methyl laurate: Not available

Ethylene glycol monobutyl ether: Typical TLV/TWA is 25 ppm. Typical STEL is 75 ppm. Typical PEL is 50 ppm.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert

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the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Engineering controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Breathing: Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

Protective Clothing: For brief contact during manufacture, warehousing and transport, wear clean body-covering clothing. During operations where exposure to the concentrated product may occur, use protective clothing impervious to this product. Selection of specific items such as face-shield, respirator, boots, gloves, apron or full body suit will depend on the operation being carried out. Applicators and other field handlers, including persons repairing or cleaning application equipment, must wear clean body-covering clothing, impervious gloves and boots. In addition, persons making and/or transferring field dilutions of this product must wear an impervious apron.

Eyes: Use safety glasses

Other protection: None specified

9. Physical and Chemical Properties:

Boiling point: Not available

Vapor pressure: Not available

Vapor density: Not available

pH: 3.4

Appearance: Colorless to yellow liquid

Odor: Mild

Coefficient of water/oil distribution: Not available

Specific gravity: 1.11

Evaporation rate: Not available

Solubility in water: Emulsifies

Freezing point: Not available

Odor threshold: Not available

10. Stability and Reactivity:

Stability: This product is thermally stable at typical use-temperatures.

Incompatibility: Avoid contact with strong acids, strong bases and strong oxidizers.

Exposure to elevated temperatures can cause this product to decompose. Generation of gas during decomposition can cause increased pressure in closed systems.

Hazardous decomposition products:

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products may include but are not limited to hydrogen chloride, nitrogen oxides and phosgene.

Hazardous polymerization: Will not occur

11. Toxicological Information:

Skin absorption: Acute dermal LD50 (rat) (male and female) is >5000 mg/kg.

Ingestion: Acute oral LD50 (rat) (female) is 3200 mg/kg.

Inhalation: The maximum practically - attainable concentration of this product in the tests (5.05 mg/L for four hours) produced no ill effects in tests in rat (male and female).

Sensitization: Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals. This product has caused allergic skin reactions when tested in mouse.

Chronic effects: For triclopyr, in animals, effects have been reported on the blood, kidney and liver.

Cancer: Triclopyr BEE did not cause cancer in long-term animal studies. In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mouse but not rat. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling practices, exposures should not pose a carcinogenic risk to man.

Birth defects: For triclopyr BEE, birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Triclopyr did not cause birth defects in test animals; other effects were seen in the fetus only at doses that caused toxic effects to the mother.

Reproductive effects: In laboratory animal studies with triclopyr BEE, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

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Mutagenicity: Results of *in-vitro* and animal mutagenicity studies with triclopyr BEE were negative.

12. Ecological Information:

Aquatic toxicity: Triclopyr is moderately toxic to aquatic organisms on an acute basis (96-hour LC50 or EC50 is between 1 and 10 mg/L in the most sensitive species).

Avian toxicity: Triclopyr is slightly toxic to birds on an acute basis (Acute LD50 is between 501 and 2000 mg/kg in the most sensitive species). Triclopyr is slightly-toxic to birds on a dietary basis (8-day LC50 is >5000 ppm in the most sensitive species).

Bee toxicity: Triclopyr is non-toxic to bees. (LD50 (contact and oral) is >100 µg/bee).

Degradation and Metabolism:

In soil: Triclopyr BEE is rapidly hydrolyzed to the acid form under field conditions. As the acid, fairly rapid degradation of triclopyr then occurs by microbial activity, with an average half-life of 46 days, depending on soil and climatic conditions. The major product of degradation is 3,5,6-trichloro-2-pyridinol (which has a half-life in soil of 30 to 90 days) with smaller amounts of 3,5,6-trichloro-2-methoxy pyridine.

In plants: In plants, the half-life of triclopyr is 3 to 10 days. The main metabolite is 3,5,6-trichloro-2-methoxy pyridine.

In animals: In mammals, following oral administration, excretion is primarily via the urine as the unchanged compound. For details of minor urinary metabolites, see: C. Timchalk et al. Toxicology 1990, **62**, 71.

13. Disposal Considerations:

Unused unwanted product: Contact Dow AgroSciences or your provincial regulatory agency for disposal information.

Container disposal: Refer to the product label for instructions regarding cleaning and disposal of empty pesticide containers. If these instructions are missing or not understood, contact Dow AgroSciences at 800 667 3852 or your provincial regulatory agency for direction.

14. Transport Information:

This product is classified as “**Not Regulated**” under regulations of the Transportation of Dangerous Goods Act.

15. Regulatory Information:

Pest Control Products Act registration number: 28434

For information phone: 800 667 3852

SDS Version : 1

SDS Revisions : New

16. Other Information:

National Fire Code classification: Not regulated

NFPA ratings: Health: 2; Flammability: 1; Reactivity: 1.

Notice: The information contained in this Safety Data Sheet (“SDS”) is current as of the effective date shown in Section 1 of this SDS and may be subject to amendment by Dow AgroSciences Canada Inc. (“DASCI”) at any time. DASCI accepts no liability whatsoever which results in any way from the use of SDS that are not published by DASCI, or have been amended without DASCI express written authorization. Users of this SDS must satisfy themselves that they have the most recent and authorized version of this SDS and shall bear all responsibility and liability with respect thereto. Any conflict or inconsistencies as to the contents of this SDS shall be resolved in favor of DASCI by the most recent version of the SDS published by DASCI.