AGROW ALLIED Ventures Pvt. Ltd

MATERIAL SAFETY DATA SHEET

1.Product and Company Identification

Product Name : Haloxyfop R Methyl Technical 98% Min.

Chemical Name : methyl (R)-2-(4-(3-chloro-5trifluoromethyl-2pyridyloxy)phenoxy) propionate

Type : Herbicide

Molecular formula : $C_{16}H_{13}ClF_3NO_4$

2.Composition/Information on ingredients

Chemical Name	CAS#	Percent or content(w/w)
Haloxyfop R Methyl Technical	72619-32-0	98.00 %
Other ingredients	-	2.00 %

3.Health Hazards Identification

Hazard Identification

Harmful if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment.

4. First Aid Measures

IF SWALLOWED: Call a physician or Poison Control Center immediately for treatment advice. Have the 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. Have product or container label with you when calling a poison control center or doctor or going for treatment.

IF IN EYES: 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. Call a poison control center for treatment advice.

IF INHALED: Remove person to fresh air. If person is not breathing call an emergency number for medical treatment immediately and begin artificial respiration, preferably mouth to mouth. Call a poison control center or doctor for further treatment advice.

IF ON SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advise.

NOTES TO PHYSICIAN: This product has low oral, dermal, and inhalation toxicity. If swallowed, gastric lavage using an endotracheal tube may be preferred to vomiting. It is severely irritating to the eyes and mildly irritating to skin. Treatment is otherwise controlled by removal of exposure followed by symptomatic and supportive care.

5.Fire Fighting Measures

FLASH POINT (method): Not flammable.

FIRE AND EXPLOSION HAZARD: Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion. Like all organic and most dry chemicals, airborne powder or dust in the presence of an ignition source may cause an explosion.

EXTINGUISHING MEDIA: Use dry foam, dry chemical, carbon dioxide, or water spray when fighting fires involving this material. Minimize the use of water to avoid environmental contamination. Contain all runoff.

FIRE FIGHTING INSTRUCTIONS: Evacuate the area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Dike and collect fire-extinguishing water to prevent environmental damage with excessive water runoff.

FIRE FIGHTING EQUIPMENT: Self-contained breathing apparatus with full face-piece. Full fire fighting turnout gear (Bunker gear).

6.Accidental Release Measures

Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary personnel from entering.

SMALL SPILL: Sweep up small spills and place material in appropriate recovery drums for disposal.

LARGE SPILL: Contain large spills and recover for disposal. After removal, neutralize the spill area, tools, and equipment with a dilute alkaline solution (soda ash or lime) followed by an appropriate alcohol (methanol, ethanol or isopropanol). Wash the spill area, tools, and equipment with a strong soap and water solution. Absorb any excess liquid and add to the recovery drums of waste already collected. Dispose wastes as described in Section 13.

KEEP OUT OF REACH OF CHILDREN

HANDLING: Use only in a well ventilated area.

STORAGE: Keep in original containers, tightly closed, out of reach of children. Keep away from food, drink and animal feeding stuffs. Containers should be stored in a cool, dry, well-ventilated area away from flammable materials and sources of heat or flame.

8.Exposure Controls/Personal Protection

ENGINEERING CONTROLS:

Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

EYE PROTECTION:

Safety goggles or full face shield.

CLOTHING:

Wear coveralls or long-sleeved uniform, head covering, socks, and chemical resistant shoes. Remove contaminated clothing and wash before rewearing. Wash separately from other laundry.

GLOVES:

Chemical resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber or Viton.

RESPIRATOR: When handling in enclosed areas where exposure limits may be exceeded, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSG approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Discard clothing and other absorbent materials that have been heavily contaminated with this products. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS:

• Wash hands 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 PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

9.Physical and Chemical Properties

Color:	Clear to slightly turbid, light yellowish
Physical State:	Liquid
Boiling Point:	>280º C
Specific Density:	1.372 g/cm^3
Vapor Pressure:	2.6×10^{-5} hPa (20°C)
Solubility:	Water = 9.08 g/ml; Acetone, cyclohexanone, dichloromethane, ethanol, ethyl acetate, hexane, isopropyl alcohol, methanol, toluene, xylene >1000g/l at 20 ± 5°C

10.Stability and Reactivity

CHEMICAL STABILITY: Stable, however may decompose if heated.

CONDITIONS TO AVOID: Avoid excessive heat and fire.

INCOMPATABILITY WITH OTHER MATERIALS: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, and hydrogen chloride.

HAZARDOUS POLYMERIZATION: Product will not undergo polymerization.

11.Toxicological Information

ACUTE TOXICITY:

ORAL (rat): The oral LD50 is ≥300mg/kg

DERMAL (rabbit): The dermal LD_{50} is > 2000mg/kg

INHALATION (rat): The inhalation LC_{50} (4 hrs.) is > 2.3 mg/L

EYE IRRITATION (rabbit): Causes slight eye irritation.

SKIN IRRITATION (rabbit): Causes s no skin irritation

SKIN SENSITIZATION (guinea pig): Non-sensitizer

12. Ecological Information

Effect on birds: moderate toxicity to birds, acute LD50 is 1159 a.i.mg/kg.

Effect on fish: high toxicity to fish, acute 96 hour LC50 for Bluegill sunfish is 0.088 a.i.mg/L.

Effect on aquatic invertebrates: moderate toxicity to aquatic invertebrates, acute 48 hour EC50 for Daphnia magna is12.3 a.i. mg/L.

Effect on algae: moderate toxicity to algae, acute72hour EC50 for Navicula pelliculosais 1.72 a.i.mg/L.

Effect on honeybees: low toxicity to honeybees, contact acute 48 hour LD50 is >100 a.i. µg/bee, oral acute 48hour LD50 is >100 a.i.µg/bee.

Effect on earthworms: moderate toxicity to earthworms, acute 14dayLC50 for Eisenia foetida is >672 a.i.mg/kg.

13. Disposal Considerations

WASTE: Pesticide wastes are toxic. Dispose of in accordance with applicable Federal, state, and local laws and regulations.

CONTAINER: Refer to product label. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Consult Federal, State, or local authorities for approved alternative procedures.

14.Transport Information

Product Name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
UN No.	:	3082
UN Hazard Class	:	9
UN Packing Group	:	III
Marine Pollutant status	:	YES
EMS	:	F-A, S-F

15. Regulatory Information

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal.

16. Other Information

The information herein is presented in good faith and believed to be accurate as on the effective date shown above. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another.