

1: IDENTIFICATION

Chemical Name	Penoxsulam: 2-(2,2-difluoroethoxy)-6-(trifluoromethyl-N-(5,8-dimethoxy[1,2,4]triazolo[1,5-c]pyrimidin-2-yl))benzenesulfonamide		
	Cyhalofop: butyl- Butyl (R)-2-[4-(4-Cyano-2-fluorophenoxy)phenoxy]propionate, (R)-2-[4-(4-Cyano-2-fluorophenoxy)phenoxy]propionic Acid Butyl Ester		
Synonyms	Penoxsulam 1.02% + Cyhalofop-butyl 5.10% OD	Trade Name	OMNISLAM
Uses	Herbicide	Molecular Formula	C ₁₈ H ₁₅ F ₃ N ₃ O ₅ S + C ₂₀ H ₂₀ FNO ₄
Manufacturer/Supplier	Ulink AgriTech Pvt. Ltd.		
	Office Nos. 001 And 002, Ground Floor Wing "A" And Nos. 003 And 004 Ground Floor Wing "B", Nyati Tech Park, Wadgaon Sheri, Pune - 411014, Maharashtra		
Emergency Contact	9503095030	E-mail	info@agrostar.in

2: COMPOSITION/INFORMATION OF INGREDIENTS

Chemical Name	CAS #	Percent or Content (w/w)
Cyhalofop-butyl	122008-85-9	5.1%
Penoxsulam	219714-96-2	1.0%
Other	-	93.88 %

3: HAZARD IDENTIFICATION

Classification of the substance or mixture	Hazard Class:	Skin sensitization Category 1	Aspiration hazard Category 1	Chronic aquatic toxicity Category 3
Flammable liquids Category 4	Serious eye damage/eye irritation Category 2A	Carcinogenicity Category 2	Acute aquatic toxicity Category 3	
Label elements				
Hazard Symbol:	GHS07, GHS08	Signal Word: Danger		
Hazards of product:	Combustible liquid	Causes serious eye irritation	May cause an allergic skin reaction.	May be fatal if swallowed and enters airways
	Suspected of causing cancer.	Harmful to aquatic life with long lasting effects.		
Precautionary Statements:	Prevention: Wear protective gloves/ protective clothing. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.			Storage: Store locked up.
	Response: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Do NOT induce vomiting.			
	Disposal: Dispose of contents and container to licensed, permitted incinerator, or other thermal destruction device.			

4: FIRST AID MEASURES

General: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move patients to fresh air and keep warm and at rest in a position comfortable for breathing. Treat respiratory difficulty with artificial respiration and oxygen. Immediately seek medical attention if symptoms are severe or persist

Ingestion: Do not induce vomiting unless told to do so by poison control center or doctor. Do not give any liquid to a person. Do not give anything by mouth to an unconscious person. Call a poison control center or doctor immediately for treatment advice.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye 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 poison control center or doctor for treatment advice.

Most important symptoms and effects, both acute and delayed : Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed; If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5: FIRE FIGHTING MEASURES

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Extinguishing Media to Avoid: Do not use direct water stream. May spread fire.

Hazardous Thermal (de)composition: 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 and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container 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.

Special Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from 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. Do not use direct water stream. May spread fire. Move container 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. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. See section 6 and section 12 for "Accidental Release Measures" and the "Ecological Information" respectively.

Protection of Fire Fighters; Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). 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.

6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precaution: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods for Cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay, Dirt, Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7: HANDLING & STORAGE

Handling: Keep out of reach of children. Keep away from heat, sparks and flame. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Use with adequate ventilation. Keep container closed. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

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

8: EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Limits:	Component	List	Type	Value
	Naphthalene	ACGIH	TWA	10 ppm SKIN
		ACGIH	STEL	15 ppm SKIN
		ID NAB	NAB	52 mg/m ³ 10 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING. A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Hand Protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Eye Protection: Use chemical goggles.

9: PHYSICAL/CHEMICAL PROPERTIES

Appearance: Light yellowish to off-white **Odour:** Sweet **pH:** 4-8 (1% aqueous suspension) **Melting Point:** Not applicable **Boiling Point:** Not available
Flash Point: Above 24.5 C **Density:** 1.02-1.05 g/ml @ 20 °C Digital density meter **Solubility:** Emulsifies **Viscosity:** 400-600 cps

10: STABILITY & REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use. **Reactivity:** No dangerous reaction known under conditions of normal use.
Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.
Possibility of hazardous reactions: Polymerization will not occur.
Incompatible Materials: Avoid contact with: Strong oxidizers. **Chemical stability:** Thermally stable at typical use temperatures
Conditions to avoid: Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

11: TOXICOLOGICAL INFORMATION

Acute Oral Toxicity: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. As product: LD50, rat, female > 5,000 mg/kg
Acute Dermal Toxicity: Prolonged skin contact is unlikely to result in absorption of harmful amounts. As product: LD50, rat, male and female > 5,000 mg/kg
Acute Inhalation Toxicity: No adverse effects are anticipated from single exposure to mist. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not observed. As product: LC50, 4 h, Mist, rat, male and female > 6.36 mg/l No deaths occurred at this concentration
Aspiration hazard Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.
Eye Damage/eye irritation: May cause moderate eye irritation. May cause slight corneal injury.
Skin Corrosion/Irritation: Prolonged contact may cause slight skin irritation with local redness.
Sensitization - Skin: For similar material(s): Has caused allergic skin reactions when tested in guinea pigs. **Respiratory:** No relevant data found.
Repeated Dose Toxicity: For the active ingredient(s): Kidney. Liver. Gall bladder. Based on information for component(s): Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust. Ingestion of naphthalene by humans has caused hemolytic anemia. Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen. In animals, effects have been reported on the following organs: Gastrointestinal tract. Kidney. Liver. Thyroid. Urinary tract. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.
Chronic Toxicity and Carcinogenicity: Contains naphthalene which has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative. For the active ingredient(s): Did not cause cancer in laboratory animals.

Carcinogenicity Classifications:	Component	List	Classification
	Naphthalene	IARC NTP	Possibly carcinogenic to humans.; 2B Anticipated carcinogen

Developmental Toxicity: For the active ingredient(s): Cyhalofop butyl. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Active ingredient did not cause birth defects in laboratory animals.
Reproductive Toxicity: For the active ingredient(s): In animal studies, did not interfere with reproduction.
Genetic Toxicology: For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative. For the minor component(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases.

12: ECOLOGICAL INFORMATION

Toxicity Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Fish Acute & Prolonged Toxicity: As product: LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 h: 10.6 mg/l
Aquatic Invertebrate Acute Toxicity: As product: EC50, Daphnia magna (Water flea), flow-through test, 48 h, immobilization: 18.2 mg/l
Aquatic Plant Toxicity: ErC50, Pseudokirchneriella subcapitata, Growth rate inhibition, 72 h: 10.7 mg/l
Toxicity to Above Ground Organisms: Oral LD50, Colinus virginianus (Bobwhite quail): > 2250 mg/kg bodyweight. oral LD50, Apis mellifera (bees): > 200 micrograms/bee contact LD50, Apis mellifera (bees): > 200 micrograms/bee
Toxicity to Soil Dwelling Organisms: LC50, Eisenia fetida (earthworms), 14 d: 314.1 mg/kg
Cyhalofop-butyl: Biodegradation: 40% in 29 days (OECD 301B) – not readily biodegradable Bioaccumulation: Low (Log Pow: 3.32; BCF < 7)
Water half-life: 7 days Soil mobility: Low / relatively immobile (Koc: 5.247)
PBT/vPvB: Not classified as PBT or vPvB
Penoxsulam: Biodegradation: 14.7% in 28 days (OECD 301B) – not readily biodegradable Bioaccumulation: Low (Log Pow: -0.602)
Atmospheric half-life: 2.1 hours Soil mobility: High (Koc: 73)
PBT/vPvB: Not classified as PBT or vPvB
Alkylphenol alkoxylate: Biodegradation: < 2.5% under aerobic conditions
Bioaccumulation: Not expected due to high water solubility
Soil mobility: No data available
Solvent naphtha (petroleum), heavy aromatic: Biodegradation: 39% in 28 days (OECD 301D) – not readily biodegradable Soil mobility: No data available
Bioaccumulation: High (Log Pow: 2.9 – 6.1)
Naphthalene: Biodegradation: High under aerobic conditions Bioaccumulation: Moderate (Log Pow: 3.3; BCF: 40–300) Atmospheric half-life: 5.9 hours Soil mobility: Medium (Koc: 240–1,300)
Other Information None of the components are classified as ozone-depleting substances under Regulation (EC) No. 1005/2009.

13: DISPOSAL CONSIDERATION

Waste-disposal Procedures: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14: TRANSPORT INFORMATION

UN Number : 3082 **Shipper Name :** Environmentally Hazardous substances, liquid, n.o.s. **(IMDG – CODE) Class :** 9 **Packaging Group :** III **Marine Pollutant :** Yes

15: REGULATORY INFORMATION

Toxic Substances Control Act (TSCA) All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.3

16: OTHER INFORMATION

DISCLAIMER OF LIABILITY The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

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