

MATERIAL SAFETY DATA SHEET

Phoenix Environmental Care, LLC
P.O. Box 370
Valdosta, GA 31603-0370

General Information No. 229-245-8845
In Case of Emergency, Call
PROSAR: 888-875-1724

I. PRODUCT IDENTIFICATION

Product Name: Avocet PLX
Active Ingredient: Glyphosate as isopropylamine salt (53.8%)
Chemical Name: N-(phosphonomethyl) glycine

II. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	% by Wt.	ACGIH	OSHA
			TLV (mg/m ³)	PEL (mg/m ³)
*Glyphosate as isopropylamine salt	38641-94-0	40-70	N/A	N/A

*Note: The product contains about 650 g/L of the active ingredient Glyphosate as its isopropylamine salt, equivalent to 480 g/L of the free acid Glyphosate (CAS # 1071-83-6).
This material is classified as hazardous under OSHA regulations (29 CFR 1910.1200).

III. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear, colorless to light amber, viscous liquid, slight amine-like odor. Caution! Reacts with materials made of iron, galvanized steel and unlined steel, liberating (releasing) hydrogen, which may ignite. May cause eye irritation. Contains material which may cause liver and kidney effects. May be dangerous for the environment. This product may be toxic to all green plants. The product may be harmful to fish, aquatic invertebrates and aquatic plants.

POTENTIAL HEALTH EFFECTS

Target organs: Eyes, skin, respiratory system, digestive system.

Signs and symptoms of short-term (acute) exposure:

Inhalation: Inhalation may cause irritation to the nose, throat and upper respiratory tract.
Skin contact: Direct skin contact may cause slight irritation.
Eye contact: Direct eye contact may cause moderate irritation and reversible eye injury. Symptoms may include pain, redness and tearing.
Ingestion: This product is not expected to be harmful by oral administration route. Ingestion of large amounts could cause irritation. Symptoms may include nausea, vomiting and diarrhea.

Effects of long-term (chronic) exposure: Prolonged or repeated overexposure may cause liver and kidney effects.

Carcinogenicity: See TOXICOLOGICAL INFORMATION (Section XI).

Other important hazards: See TOXICOLOGICAL INFORMATION (Section XI).

Potential environmental effects: This product may be toxic to all green plants. The product may be harmful to fish, aquatic invertebrates and aquatic plants. See ECOLOGICAL INFORMATION (Section XII).

HMIS Rating: *2 Health; 1 Flammability; 0 Reactivity

IV. FIRST AID MEASURES

If in Eyes: Immediately flush with plenty of water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and flush again. Get medical attention immediately.

If on Skin or Clothing: Remove contaminated clothing and shoes. Wash with plenty of water and soap. Get medical attention if irritation develops.

Note to Physician: The irritating effects of this product can be treated as usual against effects of acids or acid fumes. Probable mucosal damage may contraindicate the use of gastric lavage.

V. FIRE FIGHTING MEASURES

FIRE HAZARDS/CONDITIONS OF FLAMMABILITY

Combustible liquid. This material may burn when exposed to extreme heat, flame and other ignition sources. Closed containers may build up pressure if exposed to excess heat. Product can react with iron, galvanized steel or unlined steel to produce flammable hydrogen gas. Flammable hydrogen gas can produce a highly combustible mixture with air and this mixture could flash or explode if ignited by heat, sparks and flame.

Flammability classification (OSHA 29 CFR 1910.1200): Class IIIB Combustible Liquid

Flash point (Method) : >212°F / 100°C (ASTM D93, Pensky-Martens Closed Cup)

Lower flammable limit (% by volume): N/A

Upper flammable limit (% by volume): N/A

Explosion data:

 Sensitivity to mechanical impact: Not sensitive

 Sensitivity to static discharge: Not expected to be sensitive to static discharge

Auto-ignition temperature: N/A

Suitable extinguishing media: For small fires, use dry chemical or carbon dioxide. For large fires, use water spray or foam.

Special fire-fighting procedures/equipment: Firefighters should wear proper chemically protective equipment and self-contained breathing apparatus operated in positive pressure mode. Move containers from fire area if it can be done without risk. Dike area to prevent water run-off. Water spray may be useful in cooling equipment and containers. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Fight fire from protected location or maximum possible distance. Avoid heavy hose streams. Avoid spreading burning material with water jet. The product does not present any unusual fire hazard. It is advisable for firemen to avoid direct contact with the product.

Hazardous combustion products: Carbon oxides, nitrogen oxides, phosphorous oxides.

VI. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section VIII, EXPOSURE CONTROLS/PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
Environmental precautions:	Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.
Spill response/Cleanup:	It is recommended to have a predetermined plan for the handling of spills. Empty vessels for the collection of spills should be available. Eliminate all sources of heat, sparks and flame. Ventilate area of release. Stop leak if you can do so without risk. For spills on the floor or other impervious surfaces, absorb spill with inert, non-combustible absorbent material, such as hydrated lime Fuller's earth or other absorbent clays. Scoop up and place contaminated absorbent material into suitable containers for later disposal (see Section XIII). Clean the spill area with soap and water, then rinse thoroughly. Do not flush to sewer or allow to enter confined spaces. Large spills that soak into the ground should be dug up, placed in suitable containers and disposed of appropriately (see Section XIII). Notify the appropriate authorities. Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body. The used containers should be properly closed and labeled. Refer to Section XIII for disposal.
Prohibited materials:	Do not use containers made of iron, galvanized steel or unlined steel.
Special spill response procedures:	If a spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the national response center (phone: 1-800-424-8002).
EPA/CERCLA Reportable quantity:	None known.

VII. HANDLING AND STORAGE

Safe handling procedures:	This material is a harmful liquid. In an industrial environment it is recommended to avoid all personal contact with the product, preferably by the use of closed systems and remote system control. Otherwise it is recommended to handle the material by mechanical means as much as possible. Wear appropriate protective equipment during handling. Use only in well ventilated area. Avoid contact with eyes, skin and clothing. Do not inhale vapors or mists. Keep away from all unprotected persons and children. Do not use near sources of heat, flame or ignition sources. This product should be mixed, stored and applied using only stainless steel, fiberglass, plastic or plastic-lined containers and equipment. This product can react with containers made
---------------------------	---

of iron, galvanized steel and unlined steel to produce flammable hydrogen gas which may form a highly combustible gas mixture with are. Keep away from bases and incompatibles. Use caution when opening containers. Keep container tightly closed when not in use. Wash thoroughly after handling. Do not contaminate water when disposing of equipment wash waters.

Storage recommendations:

Store in a cool (<100°F/ 38°C), dry, well ventilated area away from incompatibles. Store above -14°F/-10°C to avoid crystallization. If crystallization has occurred, raise temperature to 68°F/20°C and mix well. Protect container from physical damage. No smoking in the area. Inspect containers periodically for damage or leaks. Store in closed, labeled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorized persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed must be kept away. A hand wash station should be available.

Special packaging materials:

Always keep in containers made of the same materials as the supply container.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation and engineering controls:

If handled indoors, general room ventilation may not be sufficient. Provide mechanical exhaust ventilation to keep concentrations below specified TLVs and PELs.

Respiratory protection:

This product is not likely to present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material during manufacturing or handling, which produces a heavy vapor or mist, workers, should put on respiratory protection. Wear respirators approved by MSHA/NIOSH. Advice should be sought from respiratory protection specialists.

Protective gloves:

Wear impervious chemical gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. Advice should be sought from glove suppliers.

Eye protection:

Wear safety glasses with side shields or chemical splash goggles to prevent vapors or mists from entering the eyes. If using a full face shield, always use safety glasses or goggles along with the face shield to ensure adequate protection of the eyes.

Other protective equipment:

Wear appropriate protective clothing to prevent skin contact. Other protective equipment, such as an eyewash station and safety shower, may be required depending on exposure and on workplace standards.

Permissible exposure levels:

See Section II.

General hygiene considerations:

Avoid breathing vapors or mists. Avoid contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, and chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash before re-use. After work, take off all work clothes and shoes. Take a shower, using water and soap. Wear only clean clothes when leaving job.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Viscous liquid
Odor:	Slight amine-like odor
Appearance:	Light amber to light brown
Odor threshold:	N/A
Specific gravity (water = 1):	1.233 g/mL @ 68°F/20°C.
Solubility in water:	The product is miscible with water (solubility free Glyphosate acid: 10.5 g/L @ 68°F/20°C).
pH:	4.7 @ 68°F/20°C (1% aqueous solution).
Boiling point:	>212°F / 100°C
Melting/freezing point:	<32°F / 0°C.
Vapor density (Air=1.0):	Not Applicable
Percent Volatile by Weight:	N/A
Evaporation rate (n-BuAc=1.0):	N/A
Vapor pressure:	1.75×10^{-7} mmHg (1.31×10^{-5} Pa) @ 77°F / 25°C (free Glyphosate acid).
Coefficient of n-Octanol/water distribution:	$K_{ow} = 4.5 \times 10^{-4}$ (free Glyphosate acid); Log K_{ow} =-3.3 (free Glyphosate acid)
Viscosity:	372 centistokes @ 68°F/20°C; 132 centistokes @ 104°F/40°C.
Flash Point:	>212°F / 100°C

X. STABILITY AND REACTIVITY

Stability and reactivity:	This product is stable at ambient temperatures. This product can react with containers made of iron, galvanized steel and unlined steel to produce flammable hydrogen gas which may form a highly combustible gas mixture with air. This gas mixture could flash or explode when exposed to heat, sparks, flame, welder's torch, lighted cigarettes or other ignition sources.
Hazardous polymerization:	Hazardous polymerization does not occur. The product does react with caustic (alkaline) materials to liberate heat; however this is an acid-base neutralization reaction and is not polymerization.
Conditions to avoid:	Avoid heat, flame and direct sunlight.
Materials to avoid (incompatibles):	Alkalies, iron, galvanized steel and unlined steel. The product can react with caustic (basic) materials in an acid-base chemical neutralization reaction which may be hazardous because of heat release.
Hazardous decomposition products:	None known. Refer to 'Hazardous combustion products', Section V.

XI. TOXICOLOGICAL INFORMATION

Routes of exposure:	Skin contact, eye contact, inhalation, and ingestion.
Toxicological data:	LC ₅₀ (mg/L/4 hrs) = >4.24 LD ₅₀ , oral, rat (mg/kg) = >5000 LD ₅₀ , dermal, rat (mg/kg) = >4000
Carcinogenicity:	This product does not contain any materials which are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.
Teratogenicity, mutagenicity, Other reproductive effects:	None known.
Sensitization to material:	None known.
Synergistic materials:	Not available.
Conditions aggravated by exposure:	Pre-existing eye disorders.

XII. ECOLOGICAL INFORMATION

Chemical fate information:	Glyphosate is rapidly deactivated by absorption to clay particles. Glyphosate binds strongly to soil. The product, however, should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.
Ecotoxicological information:	This product is the active ingredient in herbicides and may be toxic to all green plants. The product may be harmful to fish, aquatic invertebrates and aquatic plants. Glyphosate acute toxicity is: Fish: 96-Hr LC ₅₀ , Rainbow trout (<i>Salmo gairdneri</i>) = >1000 mg/L 96-Hr LC ₅₀ , Bluegill sunfish (<i>Lepomis macrochirus</i>) >1000 mg/L Invertebrates: 48-Hr EC ₅₀ , Daphnids (<i>Daphnia magna</i>) = 930 mg/L Algae: 72-Hr IC ₅₀ , Green Algae (<i>Scenedesmus subspicatus</i>) = 72.9 mg/L

XIII. DISPOSAL CONSIDERATIONS

Handling for disposal:	Handle waste according to recommendations in Section VII.
Methods of disposal:	Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Triple rinse (or equivalent) containers, then offer for recycling or reconditioning, puncture and dispose of in a sanitary landfill. Disposal must be in compliance with all Federal, State and local regulations. Contact your local, state or federal environmental agency for specific rules.

XIV. TRANSPORT INFORMATION

US 49 CFR information: Not regulated for transport.

Canadian Transportation of Dangerous Goods Clear Language (CLR) information: Not regulated for transport.

XV. REGULATORY INFORMATION

Canada:

WHMIS information: This product is a Pest Control Product and is not regulated as a Controlled Product under the Hazardous Products Act (HPA). However, for reference purposes only, this product would have the following WHMIS Classification if it were regulated as a Controlled Product under the HPA: Class D2B (Materials causing other toxic effects, Toxic Material).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

United States:

California Proposition 65 information: This product does not contain any chemicals known to the state of California to cause cancer or reproductive harm.

EPA/CERCLA Reportable Quantity (RQ): None known.

SARA TITLE 111: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not known to contain any Toxic Chemical constituents.

XVI. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

DISCLAIMER:

The label instructions for the use of Avocet PLX reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of Avocet PLX. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application all of which are beyond the control of Phoenix Environmental Care, LLC. All such risks shall be assumed by the user.

Phoenix warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the direction for use set forth in the label booklet, subject to the risks referred to above. Any damage arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages. Phoenix makes no other express or implied warranty including any other express or implied warranty of FITNESS or MERCHANTABILITY.

The sale of Avocet PLX does not include a license under any patent owned by Phoenix.