

Agri Packaging and Logistics, Inc

2509 South Frontage Road
Sardis, Mississippi 38666

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INHALATION: The acute inhalation data suggests that this material is slightly toxic. The inhalation LC₅₀ for rats is 1.6 mg/l for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:

CANCER INFORMATION: Chronic feeding studies with glyphosate in mice and rats indicated no treatment related effects or any evidence of carcinogenicity in laboratory animals. The no effect levels in rats and mice were greater than 20,000 mg/kg and greater than 30,000 mg/kg in the diet, respectively.

TERATOLOGY (BIRTH DEFECTS): Glyphosate did not cause embryotoxicity, fetotoxicity, or any other teratogenic effects in animal studies. The no effect levels in rabbits and rats were 175 mg/kg and 1,000 mg/kg body weight, respectively.

REPRODUCTIVE EFFECTS: Glyphosate did not interfere with fertility in animal reproduction studies. The no effect level in a three-generation rat reproduction study was greater than 30 mg/kg body weight.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Based on a number of *in vivo* and *in vitro* studies, it was concluded that glyphosate is not a mutagen.

Section 4: First Aid Measures

EYES: Hold eyelids open and flush with a steady gentle stream of 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.

SKIN OR CLOTHING: 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.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by poison control center or doctor. Do not give anything by mouth to an unconscious person. Have product container or label with you when calling a poison control center or doctor or going for treatment.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention immediately.

Section 5: Fire Fighting Measures

FLASH POINT (method): Not flammable

FLAMMABLE LIMITS: Not applicable

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FIRE AND EXPLOSION HAZARD:	Thermal decomposition during a fire can produce fumes and irritating gases.
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.
FIRE FIGHTING INSTRUCTIONS:	Evacuate the area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Dike and collect water used to fight fire-extinguishing systems are preferred to prevent environmental damage with excessive water run off.
FIRE FIGHTING EQUIPMENT:	Self-contained breathing apparatus with full face-piece. Equipment should be thoroughly decontaminated after use.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon monoxide, nitrogen oxides, and phosphorus oxides.

Section 6: Accidental Release Measures

IN CASE OF SPILLS OR LEAKS: Wear protective clothing as described in Section 7 (Personal Protection and Precautions) of this MSDS. Absorb liquid with material such as clay, sand, sawdust, or dirt. Sweep up and place in a suitable container for disposal and label the contents. Follow this by washing with a strong soap and water solution. Absorb any excess liquid as indicated above, and add to the disposal container. Keep product, contaminated materials and wash water out of streams and sewers. Wash exposed body areas thoroughly after handling.

DISPOSAL METHOD: Do not contaminate food, feed, or water by storage or cleaning of equipment. Wastes resulting from the use of this product may be disposed of on site, if approved waste handling facilities are available, or at an approved waste handling facility.

PHYSICAL ENVIRONMENTAL PROPERTIES: Although glyphosate is stable to hydrolysis and photolysis, it is rapidly decomposed in the environment by microbial breakdown into CO₂ (the half-life in soil ranged from 2 to 174 days). Glyphosate strongly absorbs to soils, it is non-mobile in soils, and it does not bioaccumulate.

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ENVIRONMENTAL TOXICOLOGY: Glyphosate is slightly toxic to fish and practically non-toxic to aquatic invertebrates, honey bees, earthworms, and birds. This material is considered to be moderately toxic to algae and other aquatic plants.

Section 7: Handling and Storage

KEEP OUT OF REACH OF CHILDREN

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Wash hands thoroughly after handling or contact. Wash hand before eating, drinking, chewing gum, using tobacco, or using the toilet. Wash contaminated clothing before re-use. Thoroughly clean equipment after use. Do not contaminate drains, sewers, and waterways when disposing of equipment rinse water. Emptied containers retain vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed.

STORAGE: Keep in original containers, tightly closed, and out of reach of children and animals. Keep away from food, feedstuff and water supplies. Containers should be stored in a cool, dry, well-ventilated area and away from heat. Do not allow product to freeze. Compatible storage materials include stainless steel, aluminum, fiberglass, plastic, and glass lined containers. Incompatible storage materials include galvanized steel and unlined mild steel.

Section 8: Exposure Controls/Personal Protection

EXPOSURE LIMITS: (8 hour TLV): None established.

VENTILATION: Provide general and/or local exhaust ventilation. Ventilate all transport vehicles prior to unloading.

ENGINEERING CONTROLS: Have eye wash facilities immediately available at locations where eye contact can occur.

RESPIRATORY PROTECTION: Supplied air respirators should be worn if large quantities of mist are generated or prolonged exposure is possible.

EYE/FACE PROTECTION: Wear chemical goggles when respirator does not provide eye protection.

SKIN PROTECTION: Wear coveralls or long-sleeved shirt and long pants, chemical protective gloves (nitrile, neoprene, or Viton® brand), and shoes plus socks. Launder all work clothing before reuse. Keep work clothing separated from household laundry.

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Section 9: Physical and Chemical Properties

Color:	Amber - Brown
Physical State:	Liquid
Odor:	Slight
Density:	9.764 lbs/gal @ 20° C
Solubility:	Completely soluble in water
Flash Point:	Not flammable
pH:	4.4 to 4.9 in an aqueous solution
Stability:	Stable
Partition Coefficient:	Log Pow = < 0.000 (active ingredient)

Section 10: Stability and Reactivity

CHEMICAL STABILITY:	Stable, however may decompose if heated.
CONDITIONS TO AVOID:	Avoid excessive heat and fire.
INCOMPATIBILITY WITH OTHER MATERIALS:	Reacts with galvanized steel or unlined mild steel to produce hydrogen, a highly flammable gas.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, nitrogen oxides, and phosphorus oxides.
HAZARDOUS POLYMERIZATION:	Product will not undergo polymerization.

Section 11: Toxicological Information

ACUTE TOXICITY:	
ORAL (rat):	The oral LD ₅₀ is > 5,000 mg/kg .
DERMAL(rat):	The dermal LD ₅₀ is > 5,000mg/kg.
INHALATION (rat):	The LC ₅₀ (4 hr) is 1.6 mg/l air.
EYE IRRITATION (rabbit):	Causes moderate eye irritation. Effects reversed in 10 days.
SKIN IRRITATION (rabbit):	Causes slight skin irritation. Effects reversed in 7 days.
SKIN SENSITIZATION (guinea pig):	Not a skin sensitizer.

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Section 12: Ecological Information

ENVIRONMENTAL SUMMARY:

High concentrations of this product may be toxic to fish and aquatic plantlife. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

AQUATIC TOXICITY: LC₅₀ (96 hr) for Bluegill sunfish - 24 mg/l
LC₅₀ (96 hr) for Rainbow trout - 42 mg/l
EC₅₀ (48 hr) for Daphnia magna - 160 mg/l
ErC₅₀ (72 hr) for Green algae (growth rate) - 8.0 mg/l
EC₅₀ (96 hr) for Green algae (acute toxicity) - 2.6 mg/l

AVIAN TOXICITY: LC₅₀ (5 days) for Bobwhite quail - > 5,620 mg/kg diet
LC₅₀ (5 days) for Mallard duck - > 5,620 mg/kg diet

NON-TARGETS: LD₅₀ (48 hr) Honey bee - > 100 µg/bee
LC₅₀ (14 days) Earthworm - > 5,000 mg/kg of dry soil.

BIOACCUMULATION: BCF (whole fish) for Bluegill sunfish - < 1

DISSIPATION: Soil, field (half life) - 2 to 174 days
Koc - 884 to 60,000 l/kg
Water, aerobic (half life) - < 7 days

Section 13: Disposal Considerations

WASTE: Keep out of drains, sewers, ditches, and waterways. Recycle if appropriate facilities/equipment available. Burn in proper incinerator. Follow all local, regional, national, and international regulations.

CONTAINER: Refer to product label for disposal information. Emptied containers retain vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed. Empty packaging completely. Triple or pressure rinse empty containers. Do not contaminate water when disposing rinse waters. Ensure packaging cannot be re-used. Do not re-use containers. Store for collection by approved waste disposal service. Recycle if appropriate facilities/equipment available. Follow all local, regional, national, and international regulations.

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Section 14: Transport Information

PROPER SHIPPING NAME: Not regulated by DOT.
HAZARD CLASS OR DIVISION: None
IDENTIFICATION NUMBER: None
PACKING GROUP: Not applicable
ADDITIONAL INFORMATION: None

Section 15: Regulatory Information

SARA 313 INFORMATION: This product does not contain any substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA “Hazard Categories” promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered an acute health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

OSHA HAZARD COMMUNICATION STANDARD: This product is considered hazardous under the OSHA Hazard Communication Standard, 29 CFR Part 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Category	Rating
Health	1
Flammability	1
Reactivity	0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): Releases of this material to air, land, or water are not reportable to the National Response Center under CERCLA or to the state and local emergency planning committees under SARA Title III Section 304 and 40 CFR Part 302

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Section 16: Other Information

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR Part 1910.1200). In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

NOTICE: The information herein is presented in good faith and believed to be accurate as of 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; it is the buyer's responsibility to ensure that its activities comply with federal, state, and local laws and regulations. See MSDS for health and safety information.

Original Date: March 16, 2004

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