

MATERIAL SAFETY DATA SHEET

SURFLAN® A.S. Agricultural Herbicide
SURFLAN® A.S. Specialty Herbicide

Version: 3

Date Issued: 8/24/05

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

COMPANY IDENTIFICATION: United Phosphorus, Inc.
423 Riverview Plaza
Trenton, NJ 08611

PRODUCT INFORMATION: 1-800-247-1557 or www.upi-usa.com

PRODUCT NAME: Surflan A.S. Herbicide

PRODUCT USE: Herbicide

FOR MEDICAL EMERGENCIES, contact the National Pesticide Information Center at 1-800-858-7378
FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Oryzalin: 3,5-Dinitro- N4,N4-dipropyl-sulfanilamide	CAS# 019044-88-3	40.4%
Inert Ingredients, Total, Including:		59.6%
Propylene Glycol	CAS# 000057-55-6	
Glycerin	CAS# 000056-81-5	

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 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.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Hazardous chemical. Opaque bright orange liquid with a slight aromatic odor. May cause eye and skin irritation. LD₅₀ for skin absorption is >5000 mg/kg. Oral LD₅₀ is >5000 mg/kg. Inhalation LC₅₀ is >6.30 mg/L. Toxic to avian and aquatic organisms.

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause slight temporary eye irritation. Corneal injury is unlikely.

SKIN: Prolonged contact may cause skin irritation with local redness. Prolonged or frequently repeated skin contact may cause an allergic skin reaction in some individuals. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is >5000 mg/kg.

INGESTION: Very low toxicity if swallowed. The oral LD₅₀ for rats and mice is 5000 mg/kg. Harmful effects not anticipated from swallowing small amounts.

INHALATION: At room temperature, exposure to vapor is minimal low volatility; vapor from heated material may cause respiratory irritation and other effects. The LC₅₀ for rats was >6.30 mg/L in 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Contains component(s) which, in animals, have been shown to cause liver, kidney, bladder, spleen or blood effects. For propylene glycol, in humans, symptoms may include central nervous system depression (headache, dizziness, drowsiness, and incoordination).

CANCER INFORMATION: Thyroid follicular cell tumors observed in rats were considered a secondary response caused by mechanisms not relevant to humans. Benign skin and adnexal tumors observed in rats may also have been secondary to thyroid effects.

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TERATOLOGY (BIRTH DEFECTS): Oryzalin did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: In animal studies, the majority of components did not interfere with reproduction. Reproductive effects seen in female animals are believed to be due to altered nutritional states resulting from extremely high doses of glycerin given in the diet. Similar effects have been seen in animals fed synthetic diets.

SECTION 4 FIRST AID

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

IF ON SKIN: Wash skin with plenty of water.

IF SWALLOWED: Seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

IF INHALED: Move person to fresh air; if effects occur, consult a physician.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT: No ignition up to 200°F (93.3°C)

METHOD USED: SCC

FLAMMABLE LIMITS, AUTO-IGNITION TEMPERATURE: Not applicable (water-based product).

EXTINGUISHING MEDIA: This product is a water based suspension and will not burn.

FIRE AND EXPLOSION HAZARDS: This material will not burn until a sufficient amount of water has evaporated. At that point, the material will exhibit the flammability characteristics of propylene glycol and oryzalin. The explosive potential of oryzalin as an airborne dust is rated as severe. The minimum ignition temperature for a dust cloud is 714°F (379°C).

FIRE-FIGHTING EQUIPMENT: This product is a water based suspension and will not burn. However, if product is involved in a fire, wear positive-pressure, self-contained breathing apparatus and full protective clothing.

SECTION 6 ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS: Use absorbent material to contain and clean up small spills and dispose as waste. For large spills, contact CHEMTREC at 800-424-9300. Prevent runoff.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Harmful if swallowed, inhaled, or absorbed through the skin. Causes moderate eye irritation. May cause skin sensitization reactions in certain individuals. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor or spray mist. Do not contaminate water, food, or feed by storage or disposal. Store in original container only. Read the product label for personal protective equipment, which may be required by the Worker Protection Standard of 1993.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

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EXPOSURE GUIDELINE(S):

Propylene glycol: AIHA WEEL is 50 ppm total, 10 mg/M³ aerosol only.

Glycerin: ACGIH TLV is 10 mg/M³. OSHA PEL is 10 mg/M³ total, 5 mg/M³ respirable.

PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

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

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use safety glasses.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use a NIOSH approved air-purifying respirator.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use chemically protective clothing resistant to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full-body suit will depend on operation.

APPLICATORS AND ALL OTHER HANDLERS: Please refer to the product label for personal protective clothing and equipment.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: (@ 1 atmosphere) 212°F (100°C)

VAPOR DENSITY: 1.178 relative to air @ 25°C

SPECIFIC GRAVITY: 1.138 to 1.239 @ 25°C

ODOR: Slight aromatic odor

VAPOR PRESSURE: Approximately 23 mm Hg @ 25°C

SOLUBILITY IN WATER: Miscible in water

APPEARANCE: Bright orange opaque liquid

pH: (aqueous 50/50) 5.0 to 6.8

SECTION 10 STABILITY AND REACTIVITY

STABILITY: (CONDITIONS TO AVOID) This product is water-based and as such is stable under normal handling conditions. If the water in the mixture evaporates; however, the resultant mixture should be handled with care. The explosive potential of oryzalin as an airborne dust is rated as severe. The minimum ignition temperature for a dust cloud is 714°F (379°C).

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides and other toxic gases and fumes may be formed if product is involved in a fire.

HAZARDOUS POLYMERIZATION: Not known to occur.

SECTION 11 TOXICOLOGICAL INFORMATION

MUTAGENICITY: For oryzalin and propylene glycol: in-vitro and animal mutagenicity studies were negative.

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SECTION 12 ECOLOGICAL INFORMATION

MOVEMENT & PARTITIONING: Based largely or completely on information for oryzalin. Bioconcentration potential is low (BCF is <100 or Log Pow <3).

DEGRADATION & PERSISTENCE: Based largely or completely on information for oryzalin. Degradation is expected in the soil environment within days to weeks.

ECOTOXICOLOGY:

Based largely or completely on information for oryzalin. Material is highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L in most sensitive species).

Material is slightly toxic to birds on an acute basis (LD₅₀ is between 501 and 2000 mg/kg).

Acute oral LD₅₀ in bobwhite (*Colinus virginianus*) is 1046 mg/kg.

Acute contact LD₅₀ in honeybee (*Apis mellifera*) is >100 µg.

Acute oral LD₅₀ for honeybee (*Apis mellifera*) is >110 µg.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product may be used according to label directions or disposed of at an approved waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

Not regulated by DOT.

SECTION 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, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following 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:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
ORYZALIN	019044-88-3	40.4%

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, under applicable definitions, to meet the following categories:

An immediate 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.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

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CHEMICAL NAME	CAS NUMBER	LIST
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1,2,3-Propanetriol (Glycerin)	000056-81-5	PA1
1,2-Propanediol (Propylene Glycol)	000057-55-6	PA1

PA1=Pennsylvania Hazardous Substance (present at > or = to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	Flammability	Reactivity
2	0	0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): To the best of our knowledge, this product contains no chemical subject to reporting under CERCLA.

SECTION 16 OTHER INFORMATION

MSDS STATUS: Revision 3 replaces Revision 2. Reason for revision: update DOT information.

Revision 2 replaces Version 1, 9/10/03.

Reason for revision: formatting throughout; update company and emergency contact information; update Section 4 First Aid.

THIS INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT UNITED PHOSPHORUS, INC. TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, UNITED PHOSPHORUS, INC. EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.