

# MATERIAL SAFETY DATA SHEET

## SURFLAN® WDG HERBICIDE

Revision 2

Issue Date : 9/19/05

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT:** Surflan WDG Herbicide

**COMPANY IDENTIFICATION:** United Phosphorus, Inc.  
423 Riverview Plaza  
Trenton, NJ 08611  
1-800-247-1557 or [www.upi-usa.com](http://www.upi-usa.com)

**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: 4-(Dipropyl-amine)-3,4-Dinitro-benzenesulfonamide	CAS # 019044-88-3	85%
Other Ingredients, Total, Including:		15%
Kaolin (contains crystalline silica)	CAS # 001332-58-7	

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. Orange free-flowing granule with no odor. May cause moderate eye irritation with slight corneal injury. LD<sub>50</sub> for skin absorption in rabbits is >5000 mg/kg. Oral LD<sub>50</sub> for rats is >500 mg/kg. Inhalation LC<sub>50</sub> for rats is >4.1 mg/L for 4 hours. Highly toxic to fish 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 moderate eye irritation with slight corneal injury.

**SKIN:** Prolonged or repeated exposure not likely to cause significant skin irritation. Did not cause allergic skin reactions when tested in guinea pigs. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD<sub>50</sub> for skin absorption in rabbits is >5000 mg/kg.

**INGESTION:** Single dose oral toxicity is low. The oral LD<sub>50</sub> for rats is >500 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

**INHALATION:** Dust may cause irritation to upper respiratory tract (nose and throat). The LC<sub>50</sub> for rats is >4.1 mg/L for 4 hours.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** Oryzalin, in animals, has been shown to cause liver, kidney, bladder, spleen, and/or blood effects. Repeated excessive exposure to crystalline silica may affect lung function and cause silicosis, a progressive and disabling disease of the lungs. Some evidence suggests that kidney effects may also result from excessive exposure.

**CANCER INFORMATION:** This mixture contains a component which is listed as a carcinogen for hazard communication purposes under OSHA Standard 29 CFR Part 1910.1200. Component listed by IARC and NTP is crystalline silica. Crystalline silica has been shown to cause cancer in laboratory animals and humans. 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 laboratory animals; other fetal effects occurred only at doses toxic to the mother.

**REPRODUCTIVE EFFECTS:** Oryzalin did not interfere with reproduction in animal studies.

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### SECTION 4 FIRST AID MEASURES

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**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:** 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.

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### SECTION 5 FIRE FIGHTING MEASURES

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**FLASH POINT:** Not applicable

**FLAMMABLE LIMITS**

LFL: 0.04 oz/cu ft.

UFL: Information not available

**AUTO-IGNITION TEMPERATURE:** 374°F (190°C)

**EXTINGUISHING MEDIA:** Use water, CO<sub>2</sub>, or dry chemicals.

**FIRE AND EXPLOSION HAZARDS:** The explosive potential of Surflan as an airborne dust is rated as severe. The minimum ignition temperature for a dust cloud is 714°F (379°C). A dust layer of Surflan has a minimum ignition temperature of 374°F (190°C). Surflan should not be used in any process involving milling operations without first contacting United Phosphorus, Inc. for specific safety instructions.

**FIRE-FIGHTING EQUIPMENT:** Wear positive-pressure, self-contained breathing apparatus and full protective clothing.

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### SECTION 6 ACCIDENTAL RELEASE MEASURES

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**ACTION TO TAKE FOR SPILLS:** Contain and sweep up material of small spills and dispose as waste. For large spills, contact CHEMTREC at 800-424-9300.

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### SECTION 7 HANDLING AND STORAGE

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**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:**

**HANDLING:** Keep out of reach of children. Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye irritation. Avoid breathing spray mist and contact with skin, eyes, and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or the toilet.

**STORAGE:** Auto-ignition temperature is 374°F (190°C). Do not store near heat or open flame. Do not store in direct sunlight. Do not store at temperatures above 120°F. If stored above 120°F, Surflan could lose some of its dispersing properties, resulting in difficult application, poor weed control, or crop injury. Protect product from moisture. Store in original container only. Do not contaminate water, food, or feed by storage or disposal.

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### SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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**EXPOSURE GUIDELINE(S):** Silica, crystalline: ACGIH TLV is 0.1 mg/M<sup>3</sup> (respirable) for quartz, tripoli, and fused silica; 0.05 mg/M<sup>3</sup> (respirable) for cristobalite and tridymite. OSHA PEL is 10/%SiO<sub>2</sub> + 2 mg/M<sup>3</sup> (respirable) for quartz, tripoli, and fused silica; 1/2 the value calculated from the respirable dust formula for quartz, cristobalite, and tridymite. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

**ENGINEERING CONTROLS:** Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

### RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

**RESPIRATORY PROTECTION:** In dusty atmospheres, use a NIOSH approved dust respirator.

**SKIN PROTECTION:** No precautions other than clean body-covering clothing should be needed.

**EYE PROTECTION:** Use chemical goggles.

**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:** Not applicable

**VAPOR DENSITY:** Not applicable

**SPECIFIC GRAVITY:** Not applicable

**ODOR:** None

**VAPOR PRESSURE:** Not applicable

**SOLUBILITY IN WATER:** Disperses

**APPEARANCE:** Orange free-flowing granule

**pH:** (aqueous 50/50) 6.3

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** (CONDITIONS TO AVOID) Auto-ignition temperature is 374°F (190°C). Do not store near heat or open flame. Do not store in direct sunlight. Do not store at temperatures above 120°F. If stored above 120°F, Surflan could lose some of its dispersing properties, resulting in difficult application, poor weed control, or crop injury. Protect product from moisture. Store in original container only. Do not contaminate water, food, or feed by storage or disposal.

**INCOMPATIBILITY:** (SPECIFIC MATERIALS TO AVOID) None known.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxides of nitrogen and other toxic, irritating gases may be formed if product is involved in a fire.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

**MUTAGENICITY:** For oryzalin: in-vitro and animal mutagenicity studies were negative. For crystalline silica: in-vitro mutagenicity studies were negative in some cases and positive in other cases.

## SECTION 12 ECOLOGICAL INFORMATION

**ENVIRONMENTAL FATE:**

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

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**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 (LC<sub>50</sub>/EC<sub>50</sub> between 0.1 and 1 mg/L in most sensitive species).

### 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 disposed on site or at an approved waste disposal facility. Follow all local, state and federal regulatory requirements.

### 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
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ORYZALIN	019044-88-3	85%
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**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

A delayed health hazard

A fire 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.

CHEMICAL NAME	CAS NUMBER	LIST
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KAOLIN	001332-58-7	PA1
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PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

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**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:

Category	Rating
Health	2
Flammability	3
Reactivity	2

**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 2, 9/19/05. Reasons for revision: Update DOT shipping information, NFPA ratings.

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.