


# Material Safety Data Sheet

 **DowElanco**  
**SURFLAN\* A.S.**  
**Herbicide – Ornamentals**

SEP 05 1995

Emergency Phone: 517-636-4400  
General Phone: 1-800-352-6776

EPA Reg. Number: 62719-113  
Effective Date: January 27, 1995  
Product Code: 20122  
MSDS Number: 003738  
DowElanco • Indianapolis, IN 46268

## 1. INGREDIENTS: (% w/w, unless otherwise noted)

3,5-Dinitro-N4,N4-dipropylsulfanilamide (Oryzalin)  
CAS# 019044-88-3 .....40.4%  
Other Ingredients, total, including: .....59.6%  
Water . . . CAS# 007732-18-5  
Propylene Glycol . . . CAS# 000057-55-6  
Glycerine . . . CAS# 000056-18-5

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.

## 2. PHYSICAL DATA:

**BOILING POINT:** (@ 1 atmosphere) 212°F, 100°C  
**VAPOR PRESSURE:** Approx. 23 mm Hg at 25°C  
**VAPOR DENSITY:** 1.178 relative to air at 25°C  
**SOLUBILITY IN WATER:** Miscible in water  
**SPECIFIC GRAVITY:** 1.138 to 1.239 at 25°C  
**APPEARANCE:** Bright orange opaque liquid  
**ODOR:** Slight aromatic odor  
**pH:** (aqueous 50/50) 5.0 to 6.8

## 3. FIRE AND EXPLOSION HAZARD DATA:

**FLASH POINT:** No ignition up to 200°F, 93.3°C  
**METHOD USED:** SCC  
**FLAMMABLE LIMITS:**  
LFL: Water based product  
UFL: Water based product  
**AUTO-IGNITION TEMPERATURE:** Water based product  
**EXTINGUISHING MEDIA:** SURFLAN A.S. 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 this 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:** SURFLAN A.S. 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.

## 4. REACTIVITY DATA:

**STABILITY:** (CONDITIONS TO AVOID) Surflan A.S. is water-based and 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 may be formed if product is involved in fire

**HAZARDOUS POLYMERIZATION:** Does not occur.

## 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

**ENVIRONMENTAL DATA:** Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Cover or incorporate spills..

**ACTION TO TAKE FOR SPILLS:** Use absorbent material to contain and clean up small spills and dispose as waste. Large spills report to CHEMTREC and DowElanco for assistance. Prevent runoff.

**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.

## 6. HEALTH HAZARD DATA:

**EYE:** May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.

**SKIN CONTACT:** Prolonged exposure may cause skin irritation. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals.

**SKIN ABSORPTION:** A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD50 for skin absorption in rabbits is greater than 2000 mg/kg.

**INGESTION:** Single dose oral toxicity is low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. The oral LD50 for rats is 5000 mg/kg.

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**INHALATION:** At room temperature, exposure to vapors is unlikely due to physical properties; higher temperatures may generate vapor levels sufficient to cause irritation and other effects.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** In animals, has been shown to cause liver, kidney, bladder, spleen or blood effects. Repeated excessive ingestion of propylene glycol may cause central nervous system effects.

**CANCER INFORMATION:** In tests conducted using oryzalin, thyroid follicular cell tumors noted in rats were considered to represent a unique response of rats to p-substituted aminobenzene sulfonamides. Benign skin and adnexal tumors were seen in treated rats as well, and may also have been secondary to thyroid effects.

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

**REPRODUCTIVE EFFECTS:** Most components did not interfere with reproduction in animals. One minor component which affected reproduction was believed to act through an alteration of the nutritional status of the animals when fed at exaggerated doses.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** Results of in vitro ('test tube') mutagenicity tests and mutagenicity tests in animals have both been negative.

## 7. FIRST AID:

**EYES:** Flush eyes with plenty of water. Get medical attention if irritation develops.

**SKIN:** Wash with plenty of soap and water. Get medical attention if irritation develops.

**INGESTION:** Do not induce vomiting. Call a physician or poison control center. If available, administer activated charcoal (6-8 heaping teaspoonfuls) with a large quantity of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

**INHALATION:** Remove individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, give artificial respiration, preferably cardiopulmonary resuscitation and get medical attention immediately.

**NOTE TO PHYSICIAN:** No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

## 8. HANDLING PRECAUTIONS:

**EXPOSURE GUIDELINE(S):** Propylene glycol: AIHA WEEL is 50 ppm total, 10 mg/m<sup>3</sup> aerosol only. Glycerine: ACGIH TLV is 10 mg/m<sup>3</sup>. OSHA PEL is 10 mg/m<sup>3</sup> total, 5 mg/m<sup>3</sup> respirable. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

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

**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 an approved air-purifying respirator.

**SKIN PROTECTION:** For handling prior to end-use, use protective clothing impervious to this material when prolonged or frequently-repeated contact could occur. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. For handling during use, the Worker Protection Standard of 1993 requires that applicators and other handlers of this product must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Follow manufacturer's instructions for cleaning and maintaining personal protective equipment. If no such instructions are available for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

**EYE PROTECTION:** Eye protection must be worn when handling this product. Wear safety glasses.

## 9. ADDITIONAL INFORMATION:

**SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep out of reach of children. Harmful if swallowed, inhaled, or absorbed through the skin. Causes 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.

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Read the product label for personal protective equip-

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ment which may be required by the Worker Protection Standard of 1993 for early entry to treated areas.

**MSDS STATUS:** Revised Regulatory Information.

## REGULATORY INFORMATION:

(Not meant to be all-inclusive—selected regulations represented).

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. See MSD Sheet for health and safety information.

**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:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Concentration</u>
Oryzalin [4-(dipropylamino)-3,5-dinitrobenzenesulfonamide]	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.

### 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 .....	0
Reactivity .....	0

The Information Herein Is Given In Good Faith,  
But No Warranty, Express Or Implied, Is Made.  
Consult DowElanco For Further Information.