



Safety Data Sheet

United Phosphorus, Inc.

Preparation Date 07-May-2015

Revision date 04-Nov-2015

Revision Number: 2

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product Description: Surflan AS AG

Other means of identification

Item#: 12U-125A
UN-No UN3082
Synonyms Not Available
Registration number(s) 70506-43

Recommended use of the chemical and restrictions on use

Recommended use Herbicide.
Uses advised against Activities contrary to label recommendation

Details of the Supplier of the Safety Data Sheet

Supplier Address

United Phosphorus Inc.
630 Freedom Business Center
Suite 402
King of Prussia, PA 19406

Emergency telephone number

Company Phone Number 1-800-438-6071
Emergency telephone number Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 673-6671 (24hrs)

2. Hazards Identification

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)

Category 4

Label elements

EMERGENCY OVERVIEW

WARNING

hazard statements

HARMFUL IF INHALED



appearance Opaque Orange

Physical state liquid

Odor Slight aromatic

Precautionary Statements - Prevention

Do not get in eyes, on skin, or on clothing
Use only outdoors or in a well-ventilated area

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell

Hazards Not Otherwise Classified (HNOC)**OTHER INFORMATION**

- May be harmful in contact with skin

3. Composition/information on Ingredients

| Chemical name | CAS-No | Weight % | Trade secret |
|---------------|------------|----------|--------------|
| Oryzalin | 19044-88-3 | 40.9 | |
| Glycerin | 56-81-5 | <30 | |

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First aid measures

FIRST AID MEASURES

| | |
|---------------------|--|
| Eye contact | Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. |
| Skin contact | Take off contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. Call poison control center or doctor for treatment advice. Wash face, hands and any exposed skin thoroughly after handling. |
| Inhalation | Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately. |
| Ingestion | Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. |

Most Important Symptoms and Effects, Both Acute and Delayed

Most Important Symptoms and Effects No information available.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to physician No information available.

5. Fire-fighting measures

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

No information available.

Hazardous combustion products Oxides of nitrogen. Can emit toxic fumes under fire conditions.

Explosion data

Protective equipment and precautions for firefighters

Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with the skin and the eyes. Use personal protective equipment. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Environmental Precautions

Environmental precautions Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Methods and material for containment and cleaning up

Methods for Clean-Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Handling Keep out of reach of children. Do not eat, drink or smoke when using this product. Avoid contact with skin and eyes. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place.

incompatible materials No materials to be especially mentioned.

8. Exposure Controls/Personal Protection

Exposure guidelines

| Chemical name | ACGIH TLV | OSHA PEL |
|---------------|-----------|--|
| Glycerin | | TWA: 15 mg/m ³ mist, total particulate TWA: 5 mg/m ³ mist, respirable fraction (vacated) TWA: 10 mg/m ³ mist, total particulate (vacated) TWA: 5 mg/m ³ mist, respirable fraction |

Engineering controls Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems. PESTICIDE APPLICATORS & WORKERS. THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

Personal protective equipment

Eye/Face Protection

Where there is potential for eye contact have eye flushing equipment available. Use eye protection to avoid eye contact.

Skin protection

Long sleeved clothing. Long pants. Socks and footwear.

Respiratory protection

Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe

respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134.

General hygiene considerations

Do not eat, drink or smoke when using this product. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

| | | | |
|-----------------------|--------------------------|-------------|-----------------|
| Physical state | liquid | Odor | Slight aromatic |
| appearance | Opaque Orange | | |
| color | No information available | | |

| <u>Property</u> | <u>VALUES</u> | <u>Remarks/ • Method</u> |
|--|--------------------------|--------------------------|
| pH | 5.9 | |
| Melting point/freezing point | 6.9 °C / 44 °F | |
| Boiling Point/Range | No information available | |
| Flash Point | >93 C >200 F | |
| Evaporation Rate | No information available | |
| flammability (solid, gas) | No information available | |
| Flammability limit in air | | |
| Upper Flammability Limit | No information available | |
| Lower Flammability Limit | No information available | |
| vapor pressure | No information available | |
| Vapor Density | No information available | |
| Specific gravity | 1.138 to 1.239 @ 25 C | |
| Water solubility | No information available | |
| Solubility in Other Solvents | No information available | |
| Partition coefficient: n-octanol/water | No information available | |
| Autoignition temperature | No information available | |
| decomposition temperature | No information available | |
| Viscosity, kinematic | No information available | |
| Dynamic viscosity | No information available | |
| Explosive properties | No information available | |
| Oxidizing properties | No information available | |

OTHER INFORMATION

| | |
|------------------|--------------------------|
| Softening point | No information available |
| molecular weight | No information available |
| VOC Content | No information available |
| density | No information available |
| Bulk density | No information available |

10. Stability and Reactivity

Reactivity

no data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

incompatible materials

No materials to be especially mentioned.

Hazardous decomposition products

Toxic gases and fumes may be formed if product is involved in fire. Oxides of nitrogen.

11. Toxicological Information

Information on Likely Routes of Exposure

| | |
|---------------------|---|
| Inhalation | May cause irritation of respiratory tract. May be harmful if inhaled. |
| Eye contact | Moderately irritating to the eyes. |
| Skin contact | Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. |
| Ingestion | MAY BE HARMFUL IF SWALLOWED. |

Component Information

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.

Propylene glycol: Single exposure studies indicate that this material is practically non-toxic if swallowed (rat LD50 21,000 mg/kg) or absorbed through skin (rabbit LD50 20,800 mg/kg) and slightly irritating to rabbit eyes and skin. This material is widely used in antifreeze, hydraulic fluids, pharmaceutical solvents, food and cosmetics. Workplace experience has shown this material to have low acute and systemic toxicity. Human patch tests indicate that repeated contact causes mild irritation. Although there have been some reports of skin sensitization, studies with large groups of humans and use in topical medical applications suggest that these are likely irritant rather than sensitization responses. Repeated administration in the diet or through drinking water to rats and dogs showed essentially no adverse effects other than slight liver toxicity. Similar studies in cats showed increase in Heinz body formation in the red blood cells without anemia. Long-term oral studies in rats, dogs, and cats have shown no evidence of carcinogenic or target organ effects other than increased red blood cell turnover. Long-term inhalation exposure in monkeys showed no adverse effects. Developmental toxicity studies in mice, rats, rabbits and hamsters showed no increased birth defects or other adverse effects on the fetus. Mice and cats had no adverse effects on reproductive ability or development and survival of offspring. No genetic changes were observed in tests using bacteria, animal cells, or animals. Glycerin: No skin allergy was observed in guinea pigs or humans following repeated exposure. Oral administration in clinical use has caused nausea and vomiting. Repeated or long-term oral exposure produced no adverse effects in rats. No adverse effects on fertility or birth defects were observed in rats or their offspring following oral exposure before and during pregnancy. Generally, no genetic changes were observed in tests using bacteria or animal cells.

Single exposure studies indicate that this material is practically non-toxic if swallowed (rat LD50 12,600- 27,200 mg/kg) or absorbed through skin (rabbit LD50 >10,000 mg/kg), no more than slightly toxic if inhaled (rat 1 hr LC50 >0.57 mg/l), and slightly irritating to rabbit eyes and skin.

| Chemical name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|------------------------|----------------------|-------------------------|-----------------------------------|
| Oryzalin 19044-88-3 | > 5000 mg/kg (Rat) | > 2000 mg/kg (Rabbit) | > 4.79 mg/L |
| Glycerin 56-81-5 | - | > 10 g/kg (Rabbit) | 570 mg/m ³ (Rat) 1 h |

Information on Toxicological Effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

sensitization No information available.

Mutagenic effects No information available.

Carcinogenicity The information below indicates whether any agency has listed any ingredient as a

carcinogen.
 Not Available.
Reproductive effects
STOT - Single Exposure No information available.
STOT - repeated exposure No information available.
Target organ effects kidney, Respiratory System, EYES, skin.
Aspiration hazard No information available.

Numerical Measures of Toxicity - No information available

12. Ecological Information

Marine Pollutant.

ecotoxicity

Oryzalin:
 Highly toxic to aquatic organisms LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species. Slightly toxic to birds on an acute basis LD50 between 501 and 2000 mg/kg.
 Bobwhite quail acute oral LD50 1046 mg/kg
 Honeybee acute oral LD50 >100 ug/bee

Persistence/Degradability

No information available.

Bioaccumulation/ Accumulation

Bioaccumulative potential.

| Chemical name | Log Pow |
|------------------------|---------|
| Oryzalin 19044-88-3 | > 2 |
| Glycerin 56-81-5 | -1.76 |

Other Adverse Effects

No information available

13. Disposal Considerations

Waste Treatment Methods

Waste Disposal Method

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. Do not apply directly to wetlands or water.

Contaminated packaging

Refer to product label.

14. Transport Information

DOT

UN-No UN3082
Proper shipping name Environmentally hazardous substance, liquid, n.o.s (Oryzalin)

| | |
|-------------------------|-------------------|
| Hazard class | 9 |
| Packing group | PG III |
| Marine Pollutant | Marine Pollutant. |

IATA

| | |
|-----------------------------|--|
| UN-No | UN3082 |
| Proper shipping name | Environmentally hazardous substances, liquid, n.o.s (Oryzalin) |
| Hazard class | 9 |
| Packing group | PG III |
| Description | Marine Pollutant |

IMDG/IMO

| | |
|-----------------------------|--|
| UN-No | UN3082 |
| Proper shipping name | Environmentally hazardous substances, liquid, n.o.s (Oryzalin) |
| Hazard class | 9 |
| Packing group | PG III |
| Marine Pollutant | Yes |

| |
|-----------------------------------|
| 15. Regulatory Information |
|-----------------------------------|

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

signal word CAUTION

Ventilation Control PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

Keep out of Reach of Children. Causes moderate eye irritation. Prolonged or frequent repeated skin contact may cause allergic reaction in some individuals. Toxic to fish.

International Inventories

| | |
|---------------------------|-----------------|
| USINV | Not determined |
| DSL/NDSL | Not determined |
| EINECS/ ELINCS | Does not comply |
| ENCS | Does not comply |
| China | Does not comply |
| KECL | Does not comply |
| PICCS | Does not comply |
| AICS | Does not comply |
| TSCA | Does not comply |

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

| Chemical name | SARA 313 - Threshold Values |
|-----------------------|-----------------------------|
| Oryzalin - 19044-88-3 | 1.0 |

SARA 311/312 Hazardous

Categorization

| | |
|-----------------------------------|-----|
| Acute health hazard | yes |
| Chronic health hazard | NO |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CERCLA

SARA Product RQ 0

RCRA

Pesticide Information

State Regulations

| Component | CAS-No | CATEGORY | California Prop. 65 | Non-additive, corrosive chemical type |
|---------------------------------|------------|------------|---------------------|---------------------------------------|
| Oryzalin 19044-88-3 (40.9) | 19044-88-3 | Carcinogen | Carcinogen | |

State Right-to-Know

| Chemical name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Oryzalin | | X | | | |
| Glycerin | X | X | X | | |

International regulations

U.S. EPA Label information

EPA Pesticide registration number 70506-43

16. Other Information

NFPA HEALTH 1 flammability 1 Instability 0 Physical hazard -

Preparation Date 07-May-2015

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Revision Summary

Update section 11

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End of MSDS