

## Chemical Safety Data Sheet MSDS / SDS

## Oryzalin

Revision Date:2025-02-01 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Oryzalin  
CBnumber : CB3316472  
CAS : 19044-88-3  
EINECS Number : 242-777-0  
Synonyms : Oryzalin, Surflan

## Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## Classification of the substance or mixture

Skin sensitization, Category 1  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

## Label elements

## Pictogram(s)

Signal word : Warning

## Hazard statement(s)

H317 May cause an allergic skin reaction  
H410 Very toxic to aquatic life with long lasting effects

## Precautionary statement(s)

## Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P273 Avoid release to the environment.

#### **Response**

P302+P352 IF ON SKIN: Wash with plenty of water/...

P333+P317 If skin irritation or rash occurs: Get medical help.

P321 Specific treatment (see ... on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

P391 Collect spillage.

#### **Storage**

none

#### **Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

#### **Other hazards**

no data available

---

## SECTION 3: Composition/information on ingredients

### **Substance**

|              |                                                                   |
|--------------|-------------------------------------------------------------------|
| Product name | : Oryzalin                                                        |
| Synonyms     | : Oryzalin, Surflan                                               |
| CAS          | : 19044-88-3                                                      |
| EC number    | : 242-777-0                                                       |
| MF           | : C <sub>12</sub> H <sub>18</sub> N <sub>4</sub> O <sub>6</sub> S |
| MW           | : 346.36                                                          |

---

## SECTION 4: First aid measures

### **Description of first aid measures**

#### **If inhaled**

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately.

Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

#### **Following skin contact**

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### **Following eye contact**

Rinse with pure water for at least 15 minutes. Consult a doctor.

#### **Following ingestion**

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### **Most important symptoms and effects, both acute and delayed**

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]: Inhalation of material may be harmful. Contact may cause burns to skin and eyes. Inhalation of Asbestos dust may have a damaging effect on the lungs. Fire may produce irritating, corrosive and/or toxic gases. Some liquids produce vapors that may cause dizziness or suffocation. Runoff from fire control may cause pollution. (ERG, 2016)

### **Indication of any immediate medical attention and special treatment needed**

Skin decontamination. Skin contamination should be treated promptly by washing with soap and water. Contamination of the eyes should be treated immediately by prolonged flushing of the eyes with large amounts of clean water. If dermal or ocular irritation persists, medical attention should be obtained without delay. Other herbicides

---

## **SECTION 5: Firefighting measures**

### **Extinguishing media**

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]: SMALL FIRE: Dry chemical, CO<sub>2</sub>, water spray or regular foam. LARGE FIRE: Water spray, fog or regular foam. Do not scatter spilled material with high-pressure water streams. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal. FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

### **Specific Hazards Arising from the Chemical**

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]: Some may burn but none ignite readily. Containers may explode when heated. Some may be transported hot. For UN3508, be aware of possible short circuiting as this product is transported in a charged state. (ERG, 2016)

### **Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

---

## **SECTION 6: Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **Environmental precautions**

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### **Methods and materials for containment and cleaning up**

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

---

## **SECTION 7: Handling and storage**

## Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

## Conditions for safe storage, including any incompatibilities

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

---

# SECTION 8: Exposure controls/personal protection

## Control parameters

### Occupational Exposure limit values

no data available

### Biological limit values

no data available

## Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## Individual protection measures

### Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

### Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

### Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

### Thermal hazards

no data available

---

# SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

|                                                          |                     |
|----------------------------------------------------------|---------------------|
| Physical state                                           | Crystalline Solid   |
| Colour                                                   | Deep orange         |
| Odour                                                    | No appreciable odor |
| Melting point/freezing point                             | 141°C               |
| Boiling point or initial boiling point and boiling range | 514°C at 760mmHg    |
| Flammability                                             | no data available   |

|                                       |                                                      |
|---------------------------------------|------------------------------------------------------|
| Lower and upper explosion             | no data available                                    |
| limit/flammability limit              |                                                      |
| Flash point                           | 264.6°C                                              |
| Auto-ignition temperature             | no data available                                    |
| Decomposition temperature             | no data available                                    |
| pH                                    | no data available                                    |
| Kinematic viscosity                   | no data available                                    |
| Solubility                            | Soluble in ethanol; practically insoluble in hexane. |
| Partition coefficient n-octanol/water | log Kow= 3.73 (pH 7)                                 |
| Vapour pressure                       | 1.13E-10mmHg at 25°C                                 |
| Density and/or relative density       | 1.2                                                  |
| Relative vapour density               | no data available                                    |
| Particle characteristics              | no data available                                    |

## SECTION 10: Stability and reactivity

### Reactivity

No rapid reaction with air. No rapid reaction with water.

### Chemical stability

Stable under normal storage conditions. Decomposed by UV irradiation.

### Possibility of hazardous reactions

Flammable solid /Technical oryzalin/A dinitroaniline derivative.

### Conditions to avoid

no data available

### Incompatible materials

Incompatible with alkaline materials.

### Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /nitrogen oxides and sulfur oxides/.

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral >10,000 mg/kg
- Inhalation: no data available
- Dermal: LD50 Rabbit percutaneous >2000 mg/kg

### Skin corrosion/irritation

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

Cancer Classification: Likely to be Carcinogenic to Humans

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**

no data available

---

## SECTION 12: Ecological information

**Toxicity**

Toxicity to fish: LC50 Bluegill sunfish 2.88 mg/l /Conditions of bioassay not specified

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

**Persistence and degradability**

**AEROBIC:** Microorganisms are believed to play a role in the degradation and disappearance of oryzalin from soil. No specific soil organism has been identified as responsible for the degradation(1). In 6-month incubation studies using a non-sterile and sterile (via propylene oxide treatment) sandy loam soil, oryzalin degraded much faster in non-sterile soil indicating that soil microorganisms actively participate in the degradation(2). In soil, radiolabeled-oryzalin exhibited an ave overall half-life of 2.1 months at 24 deg C(3). The major degradate was 4-hydroxy-3,5-dinitro-benzenesulfonamide, which accounted for a maximum of 4.7% of the radioactivity(3). Eight other degradates were isolated, each accounting for < 2.4% of the applied radioactivity(3). The benzenesulfonamide ring remained intact in all of the identified metabolites(3). By the end of the experiment at 6 months, 63% of the applied radioactivity was nonextractable and 6% had been mineralized to carbon dioxide(3).

**Bioaccumulative potential**

A BCF range of 32-328 has been reported for oryzalin(1,2). According to a classification scheme(3), these BCFs suggests the potential for bioconcentration in aquatic organisms is moderate-to-high(SRC). Using 14C-labeled oryzalin and a terrestrial aquatic laboratory model ecosystem, oryzalin BCF values of 50 and 328 were determined for fish (*Gambusia affinis*) and snails, respectively(1). Oryzalin was not highly concentrated in bluegill sunfish: having a BCF of 32 in edible tissue, 106 in nonedible tissue, 66 in whole fish(2). Within 24 hrs depuration period for bluegill sunfish, there was 79%, 81% and 81% loss of radioactivity in edible, nonedible and whole fish respectively(2). By day 14, there was a loss of 89%, 95% and 94% in edible, nonedible and whole fish respectively(3).

### **Mobility in soil**

The avg Koc value is 600, with ranges from 93 to 2700(1). According to a classification scheme(2), the avg Koc value suggests that oryzalin is expected to have low mobility in soil. Results of field, greenhouse and laboratory studies have shown that oryzalin does not leach appreciably in soil(3,4). In several tests, surface applied oryzalin typically remained in the upper 7.5 cm soil profile with only minor amounts reaching the 15 cm depth(3,4). Soil movement appears to decrease with decreases in the moisture content(3).

### **Other adverse effects**

no data available

---

## **SECTION 13: Disposal considerations**

### **Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

---

## **SECTION 14: Transport information**

### **UN Number**

ADR/RID: UN3077 (For reference only, please check.)

IMDG: UN3077 (For reference only, please check.)

IATA: UN3077 (For reference only, please check.)

### **UN Proper Shipping Name**

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

### **Transport hazard class(es)**

ADR/RID: 9 (For reference only, please check.)

IMDG: 9 (For reference only, please check.)

IATA: 9 (For reference only, please check.)

**Packing group, if applicable**

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

**Environmental hazards**

ADR/RID: Yes

IMDG: Yes

IATA: Yes

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

---

**SECTION 15: Regulatory information****Safety, health and environmental regulations specific for the product in question****European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

**EC Inventory**

Listed.

**United States Toxic Substances Control Act (TSCA) Inventory**

Not Listed.

**China Catalog of Hazardous chemicals 2015**

Not Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**PICCS**

Not Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC**

Not Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

---

**SECTION 16: Other information****Abbreviations and acronyms**



CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

## References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.