



SAFETY DATA SHEET

SURFLAN FLO

Date of Issue: 16th May 2019

1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

Chemical name of active ingredient(s): Oryzalin

Recommended use: Herbicide

Supplier: Etec Crop Solutions Limited
PO Box 51584
Pakuranga, Auckland
Phone 0800 100 325

Emergency telephone number: 0800 Poison (0800 764 766) 24 Hours

2. HAZARDS IDENTIFICATION

Hazard Classification: 6.1E, 6.4A, 6.9B, 9.1A, 9.3C, 9.4C

Required identification Details: Harmful if swallowed.
May cause eye irritation.
May cause organ damage from repeated oral exposure at high doses.
Very toxic to aquatic life.
Harmful to terrestrial vertebrates.
Harmful to invertebrates.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation Information on hazardous ingredients		
Common name	CAS No	%
Oryzalin	19044-88-3	500 g/L

4. FIRST-AID MEASURES

Description of necessary first aid measures:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 0800 764 766 and is available at all times. Have this SDS with you when you call.

Effects and symptoms

First-aid measures

Inhalation:	First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Ingestion:	First aid is not generally required. If in doubt contact a Poisons Information Centre or a doctor.
Skin contact:	Blot or brush away excess product. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 10 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice.
Eye contact:	No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.
Notes to a physician:	

5. FIRE-FIGHTING MEASURES

HAZCHEM Code:	2X
Extinguishing media :	Not Combustible. Use extinguishing media suited to burning materials.
Hazardous thermal (de)composition products:	This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Protection of fire-fighters:	Wear full protective clothing and self-contained breathing apparatus. Do not breath smoke or gases.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear full protective clothing including eye/face protection. All skin areas should be covered. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product
Environmental precautions:	In the event of a major spill, prevent spillage from entering drains or water courses.
Methods for cleaning up:	Minor spills do not normally need any special cleanup measures. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever

possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

7. HANDLING AND STORAGE

Handling:

Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed.

The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage:

Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Packaging materials:

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace Exposure Guidelines

Workplace exposure standards: Not established

**Exposure Standards outside:
The workplace:** Not established

Engineering measures

Exposure control measures: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimized.

Personal Protective Equipment **Detail specifications for equipment:**

Respiratory system: Usually, no respirator is necessary when using this product.

Skin and body:

You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product.

Hands:	Elbow-length and PVC gloves
Eyes:	Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Colour:	Bright orange
Odour:	Mild odour
pH:	No data
Vapour Pressure:	2.37 kPa @ 20°C (water vapour pressure)
Boiling Point:	Approximately 100°C at 100kPa
Flash Point:	Not applicable
Solubility:	Completely soluble in water
Specific gravity or density:	1.18 Approximately
Information for flammable material including:	
Octanol/water partition coefficient:	3.73 at pH 7 (log P octanol/water)
Explosion properties:	Not an explosive
Oxidation properties:	Not an oxidizer

10. STABILITY AND REACTIVITY

Stability:	.
Conditions to avoid:	Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.
Materials to avoid:	No particular incompatibilities
Hazardous decomposition Products:	This product is likely to decompose only after heating to dryness, followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.
Hazardous polymerization:	This product is unlikely to undergo polymerisation processes.
Specific Data:	
Hazardous reactions :	This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

11. TOXICOLOGICAL INFORMATION

Acute toxicity – Oral : LD₅₀	Oryzalin is practically nontoxic by ingestion, with reported
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oral LD50 values of greater than 5000 mg/kg in rats and mice, and greater than 1000 mg/kg in cats, dogs, and chickens.

Acute toxicity - Dermal : LD₅₀

The dermal LD50 for technical Oryzalin in rabbits is greater than 2000 mg/kg, indicating slight to practically no toxicity by this route.

Acute toxicity – Inhalation: LC₅₀

Oryzalin is slightly toxic when inhaled, with a 4-hour inhalation LC50 of greater than 3 mg/L in rats.

**Skin irritation :
Eye irritation:
Sensitization :**

Oryzalin is reported to cause slight skin and eye irritation in the rabbit, and no skin sensitization in the guinea pig

Chronic toxicity

Rats fed a dietary level of about 2.5 mg/kg/day for 2 years exhibited blood changes, increased liver and kidney weights, inhibition of growth, and decreased survival. Repeated ingestion of large doses led to adverse changes in blood cell formation in dogs. Mice given dietary doses of about 200 mg/kg/day for 1 year exhibited decreased uterine and ovarian weights. Those exposed to doses of 75 mg/kg/day showed no observable effects.

Reproductive effects:

There were no adverse effects on reproduction in a three-generation study of rats fed dietary concentrations of 12.5, 37.5, or 112.5 mg/kg/day, the highest dose tested. Foetotoxic effects appeared at 12.5 mg/kg/day. It does not appear that Oryzalin causes reproductive effects.

Teratogenic effects:

There were no birth defects in the offspring of pregnant rats fed dietary concentrations as high as 112 mg/kg/day for three generations, nor in the offspring of pregnant rabbits given doses of 125 mg/kg/day, the highest dose tested. It appears that Oryzalin is unlikely to cause teratogenic effects.

Mutagenic effects:

Oryzalin was not mutagenic in several tests, including tests on live rats and mice and on bacterial cell cultures. It does not appear that Oryzalin is mutagenic.

Carcinogenicity:

When Oryzalin was fed to rats in doses as high as 135 mg/kg/day for 2 years, there was an increase in the incidence of thyroid, mammary, and skin tumors. Thyroid tumors and benign skin and mammary tumors occurred in rats fed a dietary level of 45 mg/kg/day for 2 years. However, there were no tumors in mice fed doses as high as 548 mg/kg/day for 2 years. Because of these conflicting results, it is not possible to assess the carcinogenicity of Oryzalin.

Organ toxicity:

Oryzalin has shown systemic effects on the thyroid, liver, and kidneys, as well as blood chemistry, in animal tests.

Other information :

Oryzalin is moderately well-absorbed from the gastrointestinal tract, and rapidly metabolized and eliminated following absorption. When Oryzalin was administered to

male rats, 40% of the dose was excreted in the urine and 40% in the faeces within 3 days. Similar results were obtained in tests with rabbits, a steer, and with Rhesus monkeys.

12. ECOLOGICAL INFORMATION

Breakdown in soil and groundwater:

Oryzalin is of low to moderate persistence in the field, with reported field half-lives ranging from 20 to 128 days. A representative value for soil half-life is estimated to be 20 days. Microbial degradation is mainly responsible for the breakdown of Oryzalin in soils, but it may undergo photodecomposition near the soil surface. Volatilization is not appreciable. Oryzalin is slightly soluble in water and it does not have a strong tendency to adsorb to soil particles. It is bound to a greater extent with increasing soil organic matter and clay content.

In soils with low proportions of these, high water tables and increased rainfall, Oryzalin may be mobile, and thus present a risk of contamination to groundwater.

Breakdown in water:

No breakdown of Oryzalin by hydrolysis was observed at pH 5, 7, and 9. Based on its behavior in soil, breakdown by microbial processes is probably slow in the aquatic environment due to low levels of oxygen and low microbial activity. Photodegradation may be significant in the upper portions of the water column.

Breakdown in vegetation:

Oryzalin is readily absorbed via the roots, and plant metabolism of Oryzalin is minimal.

13. DISPOSAL CONSIDERATIONS

Methods of disposal :

Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, follow the recommendations in NZS 8409.

CONTAINER DISPOSAL: Triple rinse container and add residue to spray tank. Recycle through Agrecovery, otherwise bury in landfill.

14. TRANSPORT INFORMATION -International transport regulations

UN number:

UN 3082

Class or Division:

9

Classification Code:

III

Packing Group:

Marine Pollutant:

Proper shipping name:

Environmentally Hazardous Substance, Liquid,
N.O.S (Oryzalin)

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

15. REGULATORY INFORMATION

ACVM Registered Number:

P003607

HSNO Approval Code:

HSR000540

16. OTHER INFORMATION

Additional information:

Original Issue Date: 16 May 2019

Revision Date:

Replaces:

Disclaimer EXCLUSION OF LIABILITY: PLEASE READ

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