



MATERIAL SAFETY DATA SHEET

Rygel Oryzalin 500 Flowable Herbicide

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY

Supplier: Profeng Australia Pty Ltd
A.C.N.: 156 055 533
Street Address: 103 Ordish Road, Dandenong South, Vic 3175
Facsimile: (03) 9768 2804
Email: info@profeng.com.au
Emergency telephone number: National Poisons Information Centre: Dial 13 11 26.

Substance: Oryzalin is a 2,6-dinitroaniline derivative.
Product name: Rygel Oryzalin 500 Flowable Herbicide
Product Type: Group D Herbicide
Formulation type: Suspension Concentrate
Poison Schedule: exempt
Product Use: Agricultural herbicide for use as described on the product label.

2. HAZARDS IDENTIFICATION

Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of SWA Australia. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

Risk Phrases: Not Hazardous - No criteria found.
Safety Phrases: S23, S36, S24/25. Do not breathe spray mists. Wear suitable protective clothing. Avoid contact with skin and eyes.
SUSMP Classification: None allocated
ADG Classification: None allocated. Not a Dangerous Good.
UN Number: None allocated
Signal word: NONE. Not hazardous.

Precautionary statement(s)

P337 If eye irritation persists: seek medical attention
P403+P235 Store in a well-ventilated place. Keep cool



P501 Dispose of contents/container in accordance with local/regional/national regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion
Oryzalin	19044-88-3	500g/L
Other Non-hazardous ingredients	secret	to balance

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS) or are Australian Pesticides & Veterinary Medicines Authority (APVMA) approved active constituents.

4. FIRST AID MEASURES

General Information:

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 13 11 26 from anywhere in Australia and is available at all times. Have this MSDS with you when you call.

Inhalation: 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.

Ingestion: First aid is not generally required. If in doubt contact a Poisons Information Centre or a doctor.

5. FIRE-FIGHTING MEASURES

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. 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.



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Extinguishing Media: Not Combustible. Use extinguishing media suited to burning materials.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: Does not burn.

Upper Flammability Limit: Does not burn.

Lower Flammability Limit: Does not burn.

Autoignition temperature: Not applicable - does not burn.

Flammability Class: Does not burn.

6. ACCIDENTAL RELEASE MEASURES

Accidental release: Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. 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. However, if you have any doubts consult the Australian Standard mentioned below (section 8).

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 MSDS 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 MSDS for details of personal protective measures,



and make sure that those measures are followed.

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

Exposure Limits TWA (mg/m³) STEL (mg/m³)

Exposure limits have not been established by NOHSC for any of the known significant ingredients in this product.

The ADI for Oryzalin is set at 0.1mg/kg/day. The corresponding NOEL is set at 12mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2003.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: 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 minimised.

Eye Protection: Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

Skin Protection: 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. See below for suitable material types.

Protective Material Types: There is no specific recommendation for any particular protective material type.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Description:	Bright orange coloured liquid
Odour:	Mild odour
Boiling Point:	Approximately 100°C at 100kPa
Freezing Point:	Approximately 0°C
Volatiles:	Water component
Vapour Pressure:	2.37 kPa at 20°C (water vapour pressure)
Vapour Density:	No data
Specific Gravity:	1.18 approx
Water Solubility:	Completely soluble in water
pH:	No data
Volatility:	No data
Odour Threshold:	No data
Evaporation Rate:	No data
Co-eff Oil/water distribution:	3.73 at pH 7 (log P octanol/water)
Autoignition temp:	Not applicable - does not burn

10. STABILITY AND REACTIVITY

Reactivity: 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.

Conditions to Avoid: Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: No particular incompatibilities.

Fire Decomposition: 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 sulphur (sulphur dioxide is a respiratory hazard) and other sulphur compounds. Most will have a foul odour. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product is unlikely to undergo polymerisation processes.

11. TOXICOLOGICAL INFORMATION

Toxicity: Acute toxicity: Oryzalin is practically non-toxic by ingestion, with reported oral



LD50 values of greater than 5000 mg/kg in rats and mice, and greater than 1000 mg/kg in cats, dogs, and chickens. The dermal LD₅₀ for technical Oryzalin in rabbits is greater than 2000 mg/kg, indicating slight to practically no toxicity by this route. It is reported to cause slight skin and eye irritation in the rabbit, and no skin sensitization in the guinea pig. It is also slightly toxic when inhaled, with a 4-hour inhalation LC₅₀ of greater than 3 mg/L in rats. Formulated products may show moderate toxicity by either the oral or inhalation routes, and may show skin and eye irritation and skin sensitization properties. In dogs and cats, large oral doses cause nausea and vomiting.

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.

Carcinogenic effects: 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.

Fate in humans and animals: **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 behaviour 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

Product Disposal

On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemCollect).

Container Disposal

Thoroughly wash out the inner and add washings to the spray tank. Dispose of washed inner and cardboard box in landfill.

If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION

ADG Code: This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

15. REGULATORY INFORMATION

AICS (Australia): All of the components in this product are listed on the Australian



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Inventory of Chemical Substances.

16. OTHER INFORMATION

All information contained in this document is as accurate as possible based on information submitted by raw material suppliers. **Profeng Australia Pty Ltd** will not be responsible for any damages that may result from reliance on the information contained herein.