



MATERIAL SAFETY DATA SHEET

Rygel Oxyfluorfen Herbicide

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY

Supplier: Profeng Australia Pty
A.C.N.: 156 055 533
Street Address: 103 Ordish Road, Dandenong South, Vic 3175
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Emergency telephone number: National Poisons Information Centre:
Phone Australia 13 11 26.

Product name: Rygel Oxyfluorfen Herbicide
Product Use: A herbicide for the selective control of certain broadleaf and grass weeds.

2. HAZARDS IDENTIFICATION

Statement of Hazardous Nature

This product is classified as: Xi, Irritating. N, Dangerous to the environment. Hazardous according to the criteria of SWA.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code. However, this is a C1 Combustible Liquid so must be stored and handled as specified in AS 1940 "The storage and handling of flammable and combustible liquids."

Risk Phrases R50, R61, R36/37/38. Very toxic to aquatic organisms. May cause harm to the unborn child. Irritating to eyes, respiratory system and skin.

Safety Phrases S23, S26, S28, S38, S61, S62, S24/25. Do not breathe mists or spray. In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. After contact with skin, wash immediately with plenty of soap and water. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. If swallowed, do

SUSMP Classification	not induce vomiting: seek medical advice immediately and show this MSDS. Avoid contact with skin and eyes.
ADG Classification	S5 None allocated. Not a Dangerous Good under the ADG Code.
UN Number	None allocated
Pictogram	
Signal word	Danger
Hazard statement(s)	
H315	Causes skin irritation
H320	Causes eye irritation
H400	Very toxic to aquatic life.
Precautionary statement(s)	
P261	Avoid breathing fumes, mists, vapours or spray
P402+P404	Store in a dry place. Store in a closed container
P501	Dispose of contents/ container to an approved waste disposal plant

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS No	Conc.
Oxyfluorfen	042874-03-3	23%
N-methyl-2-pyrrolidone (NMP)	872-50-4	10-20%
Solvent naptha (petroleum) heavy aromatic	64742-94-5	40-60%
Other non-hazardous ingredients	secret	5-25%

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

4. FIRST AID MEASURES

Consult the Poisons Information Centre (13 11 26) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.

Inhalation: Move person to fresh air. If person is not breathing, call an ambulance



(dial 000), then give artificial respiration; if by mouth-to-mouth use rescuer protection (pocket mask etc). Call a Poison Information Centre (dial 13 11 26) or doctor for treatment advice. If breathing is difficult, qualified personnel should administer oxygen.

Skin Contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items, which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands.

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: For advice, contact a Poisons Information Centre. Phone 13 11 26. Do not induce vomiting unless told to do so by a Poisons Information Centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Flash Point: 98°C (Method Used: SCC)

Auto-Ignition Temperature: 346°C (NMP)

Flammability Limits: UFL: 11.8% (solvent naphtha) LFL: 1.3% (NMP)

Extinguishing Media: When product is involved in a fire use CO₂, dry chemical, water spray or foam.

Fire & Explosion Hazards: Pesticide particulates can become airborne. Combustion generates toxic fumes of the following: hydrogen chloride, hydrogen fluoride, and nitrogen oxides. Dried product can burn.

Fire-Fighting Equipment: Remain upwind. Avoid breathing smoke. Wear self-contained breathing apparatus that conforms to relevant Australian Standards and full protective gear. Use water spray to cool containers exposed to fire. Contain run-off.

HAZCHEM: 2X



6. ACCIDENTAL RELEASE MEASURES

Action To Take For Spills/Leaks: Do not touch or walk through spilled material. Wear a face-shield or goggles, overalls buttoned to neck and wrist, chemical resistant gloves and footwear. Stop leak when safe to do so. Dam the area and prevent entry into waterways, and drains.

Small spills/leaks: Absorb with material such as sand, soil or sawdust. Collect spilled product and place in sealable container for disposal. Spill residues may be cleaned using water and detergent. Contain and absorb wash water for disposal. Absorb and collect washings and place in the same sealable container for disposal.

7. HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storage:

Handling: Keep out of reach of children. Harmful if swallowed or inhaled. Causes eye and skin irritation. Avoid contact with eyes, skin and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Storage: Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight when not in use. Do not store with food, feedstuffs, fertilizers and seeds. See product label for further handling/storage precautions relative to the end use of this product. Reduce stacking height where local conditions can affect packaging strength. These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards: These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

Oxyfluorfen: 0.2 mg/m³, TWA and 1.6 mg/m³, STEL.

NMP: TWA 25ppm; 103 mg/m³ (NOHSC). STEL 75ppm; 309 mg/m³ (NOHSC). AIHA WEEL 10 ppm, Skin. Interim Industrial Hygiene Guide is 500 ppm.

A 'skin' notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapours or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Engineering Controls: Provide general and/or local ventilation to control airborne levels below the exposure guidelines.

Recommendations For Manufacturing, Commercial Blending, And Packaging



Workers:

Eye/Face Protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator that complies with Australian Standards.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron, or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items, which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Respiratory: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an air-purifying respirator that complies with Australian Standards.

Applicators And All Other Handlers: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Description & Colour:	Amber Liquid
Odour:	Sweet
pH:	7.2 to 7.5
Vapour Pressure:	0.29 mmHg @ 20°C (NMP)
Boiling Point:	201.7°C (NMP)
Melting Point:	-24.4°C (NMP)
Volatiles:	No specific data. Expected to be low at 100°C.
Vapour Density:	5.2 (solvent, naphtha)
Specific Gravity:	1.08 approx at 20°C
Water Solubility:	Emulsifiable
% Volatility:	62 to 64% (estimate)
Evaporation Rate:	0.06 (NMP)
Viscosity:	12.6 cPs
Flash Point:	98°C
Flammability Limits:	UFL: 11.8 (solvent naphtha) LFL: 1.35 (NMP)
Combustible Liquid:	C1

10. STABILITY AND REACTIVITY

Stability: (CONDITIONS TO AVOID) Stable under normal storage conditions. Avoid contact with ignition sources (e.g. sparks, open flame, and heated surfaces).

Incompatibility: (SPECIFIC MATERIALS TO AVOID) Avoid contact with the following:



acids, bases, amines, oxidizing agents, halogens, and sodium hypochlorite.

Hazardous Decomposition Products: Thermal decomposition may yield the following: hydrogen chloride, hydrogen fluoride and nitrogen oxides.

Hazardous Polymerization: Not known to occur.

11. TOXICOLOGICAL INFORMATION

Potential Health Effects: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

Eye: May cause moderate eye irritation. May cause slight corneal injury. Vapour may cause eye irritation experienced as mild discomfort and redness.

Skin: Brief contact may cause severe skin irritation with pain and local redness. Skin contact may cause allergic skin reaction. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rats is >4000 mg/kg.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. The oral LD₅₀ for rats is 2985 mg/kg (females) and 4594 mg/kg (males).

Inhalation: Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause central nervous system effects. Symptoms of excessive exposure may be anaesthetic or narcotic effects; dizziness and drowsiness may be observed. The aerosol LC₅₀ for rats is >4.8 mg/L for 4 hours.

Systemic (Other Target Organ Effects): Oxyfluorfen, in animals, effects have been reported on the following organs: blood, kidney, liver, spleen, bone marrow, adrenals, urinary bladder. For the other ingredients, in animals, effects have been reported on the following organs: lungs, stomach, thyroid, urinary tract, blood-forming organs (bone marrow & spleen) and liver.

Cancer Information: Oxyfluorfen has caused cancer in laboratory animals.

Teratology (Birth Defects): Oxyfluorfen has been toxic to the foetus in laboratory animals only at doses toxic to the mother. NMP has caused toxic effects to the foetus in laboratory animals at high dose levels with either mild or undetectable maternal toxicity.

Reproductive Effects: For oxyfluorfen, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity: For oxyfluorfen and the solvent, in-vitro and animal genetic toxicity studies were negative. For the minor component(s), in-vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.



12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

Movement & Partitioning: Based largely or completely on information for oxyfluorfen. Bioconcentration potential is moderate (BCF is between 100 and 3000 or log Pow between 3 and 5). Measured log octanol/water partition coefficient (log Pow) is 4.7.

Degradation & Persistence: Based largely or completely on information for oxyfluorfen. Biodegradation under aerobic laboratory conditions is below detectable limits (BOD₂₀ or BOD₂₈ is <2.5%). Biodegradation reached in Closed Bottle Test (OECD Test No. 301D) after 28 days is 1.2%.

Ecotoxicology: Based largely or completely on information for oxyfluorfen.

Material is very **highly toxic to aquatic organisms** on an acute basis (LC₅₀ or EC₅₀ is <0.1 mg/L in the most sensitive species tested). Growth inhibition EC₅₀ in blue-green alga (*Anabaena flos-aquae*) is >0.1 mg/L.

Growth inhibition EC₅₀ in diatom (*Navicula sp.*) is 0.03 mg/L. Growth inhibition EC₅₀ in duckweed (*Lemna sp.*) is 0.0003 mg/L.

Material is **practically non-toxic to birds** on an acute basis (LD₅₀ is >2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).

The LC₅₀ in earthworm (*Eisenia foetida*) is >1000 mg/kg. Growth inhibition EC₅₀ in green alga (*Selenastrum capricornutum*) is >0.0029 mg/L.

13. DISPOSAL CONSIDERATIONS

Disposal Method: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on

characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

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. It is good practice to not



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transport agricultural chemical products with food, food related materials and animal feedstuffs.

15. REGULATORY INFORMATION

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredients: Aromatic hydrocarbons, are mentioned in the SUSDP.

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.