

Rygel Propyzamide 500 SC Herbicide

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Supplier: Rygel Australia Pty Ltd
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Emergency telephone number: National Poisons Information Centre: Phone Australia 13 11 26.

Product name: Rygel Propyzamide 500 SC Herbicide
Recommended Use: For selective control of certain grasses and broad leaf weeds in Lettuce, Sports Turf, Home Lawns and Legumes Seed Crops and Pastures.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Characterization: Suspension Concentrate

Ingredients	CAS No	Conc. %	TWA (mg/m ³)	STEL (mg/m ³)
Propyzamide	23950-58-5	500g/L	not set	not set
Ethylene glycol	107-21-1	42g/L	60	120
Other non hazardous ingredients	secret	<10	not set	not set
Water	7732-18-5	to 100%	not set	not set

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

3. HAZARDS IDENTIFICATION

Statement of Hazardous Nature

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

SUSDP Classification: S5

ADG Classification: None allocated. Not a Dangerous Good under the ADG Code.

UN Number: None allocated

Risk Phrases

- R36/38 Irritating to eyes and skin
R40 Possible risk of irreversible effects
R51/53 Toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Safety Phrases

- S2 Keep out of reach of children
S23 Do not breathe spray mists.
S36/37 Wear suitable protective clothing and gloves
S60 This material and its container must be disposed of as hazardous waste
S61 Avoid release to the environment. Refer to special instructions in Sections 6, 7 and 13.

4. FIRST AID MEASURES

Consult the Poisons Information Centre (Australia 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.

Eyes: 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 doctor, preferable an ophthalmologist.

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Skin: Wash off in flowing water or shower, use soap if available. Consult a doctor if irritation persists.

Ingestion: Do not induce vomiting. Call a doctor. The decision to induce vomiting or not should be made by a doctor.

Inhalation: Remove to fresh air. Consult a doctor.

Advice to Doctor: Supportive care. No specific requirements. Treat symptomatically.

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.

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.

Auto-ignition temperature: Not applicable - does not burn.

Flammability Class: Does not burn.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal

DO NOT touch or walk through spilled material. Wear a face shield or goggles, overalls buttoned to neck and wrist, chemical resistant gloves and boots. Stop leak when safe to do so. Dike area and prevent entry into waterways and drains.

Spills/Leaks

Absorb with materials such as sand, soil or proprietary absorbent (such as vermiculite). 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

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. 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: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. 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 "Incompatibilities" 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**.

ASCC Exposure limits	TWA (mg/m3)	STEL (mg/m3)
Ethylene glycol	60	120

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

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proper containment systems.

Ventilation: This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC, butyl rubber.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Description	viscous liquid
Colour:	Light brown coloured
Odour:	Mild odour
Boiling Point:	Approximately 100°C at 100kPa
Freezing/Melting Point:	Below 0°C
Volatiles:	Water component
Vapour Pressure:	2.37 kPa at 20°C (water vapour pressure)
Vapour Density:	No data
Specific Gravity:	1.1-1.2 at 20°C
Water Solubility:	Forms suspensions in water

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: strong acids, strong bases, strong oxidising agents.

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 in reducing atmospheres. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: Polymerisation reactions are unlikely; they are not expected to occur.

11. TOXICOLOGICAL INFORMATION

Toxicity: Acute toxicity: Propyzamide is practically non-toxic via ingestion. The reported oral LD₅₀ values for Propyzamide range from 5620 mg/kg in female rats to 8350 mg/kg in male rats, respectively, and 10,000 mg/kg in dogs. Propyzamide is slightly toxic by skin exposure, with a dermal LD₅₀ of greater than 3160 mg/kg. When applied to the skin of rabbits, it produced slight local irritation, but no systemic intoxication. The 4-hour inhalation LC₅₀ for Propyzamide is greater than 5.0 mg/L, indicating slight toxicity by this route.

Chronic toxicity: When dogs were fed a diet containing Propyzamide for 3 months, decreases in weight gain and food consumption, changes in blood chemistry, and increased liver weights were observed at doses of 15 mg/kg/day. In a study in rats over 3 months, similar effects were seen at doses of over 10 mg/kg/day, and changes in thyroid, adrenal, and pituitary function were observed at 50 mg/kg/day. In a 2-year feeding study in dogs, the addition of Propyzamide to the diet at doses of

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0.75, 2.5, or 7.5 mg/kg/day caused no adverse health effects at any of the doses tested.

Reproductive effects: When pregnant rabbits were given doses of 5, 20, or 80 mg/kg/day during days 7 to 19 of gestation (18 rabbits per dose), no effects on development or reproduction were observed at or below the 20 mg/kg dose. At 80 mg/kg, there was an increased incidence of liver lesions, one maternal death, five abortions, and a decrease in maternal and offspring weight gain. In a three-generation rat reproduction study, no effects on reproduction were observed at 300 ppm (15 mg/kg/day), the highest dose tested. It is unlikely that Propyzamide will have reproductive effects except at doses high enough to cause maternal toxicity.

Teratogenic effects: No teratogenic effects were found when doses as high as 15 mg/kg/day were administered to pregnant rabbits. This evidence suggests Propyzamide is not teratogenic.

Mutagenic effects: Mutagenicity tests on bacteria, mammalian cell cultures, and live animals have been negative. It appears Propyzamide is not mutagenic.

Carcinogenic effects: Propyzamide caused liver tumours in mice after 2 years at doses of 10 mg/kg/day and above. In rats, doses of 50 mg/kg/day and above produced changes in ovary and liver structure and function, as well as thyroid and testicular effects. These data suggest that Propyzamide may have carcinogenic activity at sufficient doses.

Organ toxicity: Target organs identified in animal studies include the liver, thyroid, and adrenal and pituitary glands.

Fate in humans and animals: Propyzamide is not readily absorbed into the bloodstream from the gastrointestinal tracts of rats and cows. After oral doses of a formulated product to rats, 54% and 0.6% of the un-metabolised Propyzamide was recovered in faeces and urine, respectively. Un-metabolised Propyzamide did not appear in the urine of a cow treated orally with the formulated product. Traces of Propyzamide were found in the milk of cows given feed that contained 5 ppm doses of a Propyzamide formulation. Propyzamide has a low potential for bioaccumulation in animal tissues.

12. ECOLOGICAL INFORMATION

Toxic to aquatic organisms may cause long-term adverse effects to the aquatic environment. This product is biodegradable. It will not accumulate in the soil or water or cause long-term problems.

Effects on birds: Propyzamide is practically non-toxic to birds. The oral LD₅₀ for Propyzamide in Japanese quail is 8700 mg/kg, and greater than 14,000 mg/kg in mallard ducks. The 8-day dietary LC₅₀ for Kerb Technical Herbicide in bobwhite quail and mallard ducks is greater than 10,000 ppm.

Effects on aquatic organisms: Propyzamide is practically non-toxic to warm water fish and slightly toxic to cold-water fish. The 96-hour LC₅₀ for Propyzamide is 100 mg/L in bluegill sunfish, 72 mg/L in rainbow trout, 350 mg/L in goldfish, 204 mg/L in harlequin fish, and 150 mg/L in guppies. The 48-hour LC₅₀ for *Daphnia magna*, a small freshwater crustacean, is greater than 5.6 mg/L. Propyzamide may be moderately toxic to aquatic invertebrates.

Effects on other organisms: Propyzamide is non-toxic to honey bees.

Environmental Fate:

Breakdown in soil and groundwater: Propyzamide is moderately persistent in most soils, with a reported average field half-life of 60 days. It is readily bound, or adsorbed, to most soils. Increasing soil temperature, and to a lesser extent, soil moisture and pH increase the rate of Propyzamide degradation in soil. In most soil types, there is very little movement, or leaching, of Propyzamide into groundwater, as it is nearly insoluble in water. Leaching of Propyzamide residues in soil is most likely in soils with low organic matter content, such as loamy sands or silt loams. Propyzamide is inactivated by soil organic matter and will not be effective on muck, peat, or other very high-organic content soils. Depending upon soil type and climatic conditions, persistence of Propyzamide may be higher.

Accumulation of the herbicide from repeated annual applications to the same soil does not appear problematic. Chemical degradation may be the main route of disappearance from the soil.

Photodecomposition at the soil surface can also occur. Soil microorganisms carry out a moderate amount of Propyzamide breakdown. The herbicide is not active against common soil microorganisms. Volatilisation loss may be high under hot, dry conditions.

Breakdown in water: In water bodies, Propyzamide is stable at a neutral pH. It is slowly degraded chemically, by light, and by aquatic and microorganisms. Loss from volatilisation is not significant. Propyzamide is thought to be stable because less than 10% was hydrolysed, or broken down in water, over a 4-week period. It is stable to hydrolysis between pH 4.7 and 8.8.

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Breakdown in vegetation: Propyzamide is readily translocated from the roots to other plant parts. Absorption of Propyzamide through plant leaves is minimal. Propyzamide is metabolised slowly by both tolerant and sensitive plants.

13. DISPOSAL CONSIDERATIONS

DO NOT re-use container. Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. **DO NOT** dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers and product should not be burnt.

DO NOT allow product to enter waterways.

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

Poisons Schedule S5

Packaging & Labelling

CAUTION

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

16. OTHER INFORMATION

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

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