



MATERIAL SAFETY DATA SHEET

Rygel Simazine 900 DF Herbicide

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY

Supplier: Profeng Australia Pty Ltdn
ACN: 156 055 533
Street Address: 103 Ordish Road, Dandenong South, Vic 3175
Telephone: (03) 9768 2803
Facsimile: (03) 9768 2804

Emergency telephone number: National Poisons Information Centre:
Phone Australia 13 11 26.

Product Name: Rygel Simazine 900 DF Herbicide
Product Use: For the control of weeds in chickpeas, lupins, T-T Canola, orchards, vineyards and certain other horticultural crops and non-crop situations.

2. HAZARDS IDENTIFICATION

Statement of Hazardous Nature

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

Risk Phrases: R40, R50/53. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Safety Phrases: S2, S13, S46, S60, S61, S20/21, S24/25, S36/37. Keep out of reach of children. Keep away from food, drink and animal feeding stuffs. If swallowed, contact a doctor or Poisons Information Centre immediately and show this SDS or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. When using, do not eat, drink or smoke. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves.

SUSMP Classification: None allocated.

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

UN Number: None allocated

Pictogram:**Signal word** Warning**Hazard statement(s)**

H351 Suspected of causing cancer

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P262 Do not get in eyes, on skin, or on clothing

P403+P235 Store in a well-ventilated place. Keep cool

P501 Dispose of contents and containers as specified on the registered label

3. COMPOSITION / INFORMATION ON INGREDIENTS**Chemical Characterization** Solid

Chemical Entity	CAS No	Conc. %
Simazine	1912-24-9	900 g/kg
Other non hazardous ingredients	secret	to 100

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**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 1126 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: No specific health data is available for this product. If any unusual symptoms become evident, or if in doubt, contact a Poisons Information Centre or a doctor.

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.

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. Fire decomposition products from this product



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may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Flash point: No data
Upper Flammability Limit: No data.
Lower Flammability Limit: No data.
Autoignition temperature: No data.
Flammability Class: No data.

6. ACCIDENTAL RELEASE MEASURES

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include cotton, rubber, PVC.

Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. 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.

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: Make sure that containers of this product are kept tightly closed. Make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. 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 ASCC for any of the significant ingredients in this product.

The ADI for Simazine is set at 0.005mg/kg/day. The corresponding NOEL is set at 0.5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, January 2001.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts 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: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when handling this product.

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

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable Dust Mask.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Description & colour:	Buff coloured granulated solid.
Odour:	Mild, sweet odour.
Boiling Point:	Not applicable.
Freezing/Melting Point:	No specific data. Simazine melts with decomposition at 225-227°C
Volatiles:	No specific data. Expected to be low at 100°C.
Vapour Pressure:	No data. Expected to be negligible at normal room temperatures.
Vapour Density:	No data.
Specific Gravity:	No data.
Water Solubility:	Dispersible.
pH:	No data.

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: This product should be kept in a cool place, preferably below 30°C.

Incompatibilities: strong oxidising agents.

Fire Decomposition: 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. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death. Hydrogen cyanide poisoning signs and symptoms are weakness, dizziness, headache, nausea, vomiting, coma, convulsions, and death. Death results from respiratory arrest. Hydrogen cyanide gas acts very rapidly; symptoms and death can both occur quickly.

Polymerisation: This product is unlikely to undergo polymerisation processes.

11. TOXICOLOGICAL INFORMATION

Toxicity: Acute toxicity: Simazine is slightly too practically non-toxic. The reported oral LD50 for technical Simazine in rats and mice is >5000 mg/kg; its dermal LD50 is 3100 mg/kg in rats and > 10,000 mg/kg in rabbits. The 4-hour inhalation LC50 in rats is greater than 2 mg/L. The formulated products, in most cases, are less toxic via all routes.

Simazine is non-irritating to the skin and eyes of rabbits except at high doses. Patch tests on humans have shown that Simazine is not a skin irritant, fatiguing agent, or sensitiser. However, rashes and dermatitis from occupational exposure to Simazine have occurred. The triazine herbicides disturb energy metabolism (thiamin and riboflavin functions). Symptoms include difficulty in walking, tremor, convulsions, paralysis, cyanosis, slowed respiration, miosis (pinpoint pupils), gut pain, diarrhoea, and impaired adrenal function. No cases of poisoning in humans have been reported from ingestion of Simazine. Rats given an oral dose of 5000 mg/kg exhibited drowsiness and irregular breathing. In another study, a single oral dose of 4200 mg/kg produced anorexia, weight loss, and some deaths in rats within 4 to 10 days. For unknown reasons, sheep and cattle are especially susceptible to poisoning by Simazine.

Doses of 500 mg/kg were fatal in sheep with death delayed for 5 to 16 days. Symptoms exhibited by poisoned sheep included lower food intake, higher water intake, incoordination, tremors, and weakness, especially in the hindquarters.

Chronic toxicity: Some 90-day feeding studies showed reduced body weight at 67 to 100 mg/kg/day. This same effect and kidney toxicity were seen in rats at doses of 150 mg/kg/day. In 2-year chronic oral feeding studies in which rats were given daily dosages of 5 mg/kg/day of Simazine in the diet, no gross or microscopic signs of toxicity were seen. When rats were given repeated doses of 15 mg/kg/day, some liver cells degenerated during the first 3 days, but the condition did not progress. Instead, the liver adapted and the compound was metabolised. Other effects observed in test animals include tremors, damage to the testes, kidneys, liver, and thyroid, disturbances in sperm production, and gene mutations.

Reproductive effects: No adverse effects on reproductive capacity or development were observed in a three generation study of rats fed 5 mg/kg/day Simazine. High rates of

foetotoxicity and decreased birth weight were noted in the foetuses of pregnant rabbits fed 75 mg/kg/day. Reproductive effects are not likely in humans under normal circumstances.

Teratogenic effects: No dose-related teratogenic effects were observed when rabbits were given daily doses of 5, 75, or 200 mg/kg for days 7 through 19 of pregnancy. Chronic inhalation of a cumulative dose of 0.3 mg/L for 8 days in pregnant rats resulted in no treatment-related developmental abnormalities. Simazine does not appear to be teratogenic.

Mutagenic effects: Simazine has shown negative results in a variety of mutagenicity tests on bacterial cultures. Tests on human lung cell cultures have produced both positive and negative results. When injected into adult male fruit flies, Simazine increased the frequency of sex-linked lethal mutations, but failed to do so when fed to larvae. Other tests for mutagenicity in fruit flies were negative. It is likely that Simazine is either non-mutagenic or weakly mutagenic.

Carcinogenic effects: Simazine was not tumorigenic in mice at the maximum tolerated dose of 215 mg/kg/day over an 18-month period. In other studies, doses as low as 5 mg/kg/day produced excess tumours (thyroid and mammary) in female rats. Because of inconsistencies in the data, it is not possible to determine Simazine's carcinogenic status.

Organ toxicity: Damage to the testes, kidneys, liver, and thyroid has been observed in test animals.

Fate in humans and animals: Studies in rats, goats, and sheep reveal that 60 to 70% of the ingested dose may be absorbed into the system, with approximately 5 to 10% distributed systemically to tissues. The remainder is eliminated via urine within 24 hours. Distribution led to detectable levels in red blood cells (highest), liver, kidney, fat, bone, and plasma. When a cow was fed 5 ppm for 3 days, no Simazine was found in the cow's milk during the next 3 days. It has been reported that Simazine residues were present in the urine of sheep for up to 12 days after administration of a single oral dose. The maximum concentration in the urine occurred from 2 to 6 days after administration.

12. ECOLOGICAL INFORMATION

Effects on birds: Simazine is practically non-toxic to birds. The reported LD50 values in mallard and Japanese quail are >4600 mg/kg and 1785 mg/kg, respectively. The acute dietary LD50 values in hens and pigeons are both greater than 5000 ppm. The 8-day dietary LC50 in bobwhite quail is >5260 ppm and in mallard ducks is >10,000 ppm.

Effects on aquatic organisms: Simazine is slightly to practically non-toxic to aquatic species. The 96-hour LC50 for Simazine is >100 mg/L in rainbow trout, 100 mg/L (wetable powder) in bluegill sunfish, 0.100 mg/L in fathead minnows, as well as carp. It may be more toxic to Daphnia and stoneflies. A 96-hour LC50 of >3.7 mg/L is reported in oysters.

Effects on other organisms: While many mammals may be insensitive to Simazine, sheep and cattle are especially sensitive. Simazine is non-toxic to bees. A soil LC50 in earthworms of >1000 mg/kg has been reported.



Environmental Fate:

Breakdown in soil and groundwater: Simazine is moderately persistent with an average field half-life of 60 days.

Soil half-lives of 28-149 days have been reported. Residual activity may remain for a year after application (2 to 4 kg/ha) in high pH soils. Simazine is moderately to poorly bound to soils. It does, however, adsorb to clays and mucks. Its low water solubility, however, makes it less mobile, limiting its leaching potential. Simazine has little, if any, lateral movement in soil, but can be washed along with soil particles in runoff. Simazine is subject to decomposition by ultraviolet radiation, but this effect is small under normal field conditions. Loss from volatilisation is also insignificant.

In soils, microbial activity probably accounts for decomposition of a significant amount of Simazine in high pH soils. In lower pH soils, hydrolysis will occur. Simazine residues have been detected in groundwater in at least 16 states. The range was from 0.00002 mg/L to 0.0034 mg/L.

Breakdown in water: The average half-life of Simazine in ponds where it has been applied is 30 days, with the actual half-life dependent on the level of algae present, the degree of weed infestation, and other factors. Simazine may undergo hydrolysis at lower pH. It does not readily undergo hydrolysis in water at pH = 7.

Breakdown in vegetation: Plants absorb Simazine mainly through the roots, with little or no foliar penetration. From the roots, it is translocated upward to the stems, leaves, and growing shoots of the plant. It acts to inhibit photosynthesis. Resistant plants readily metabolise Simazine. Plants that are sensitive to Simazine accumulate it unchanged. It is possible that livestock or wildlife grazing on these plants could be poisoned.

13. DISPOSAL CONSIDERATIONS

Triple or, preferably, pressure rinse containers before disposal. If recycling, replace cap and return containers to recycler or designated collection point. If not recycling, break, crush, puncture and bury empty containers in local authority landfill. If not available bury the containers below 500 mm in a disposal pit specifically marked and setup for this purpose clear of waterways, vegetation and roots. Empty containers and product should not be burnt. Refer to State/Territory Land Waste Management Authority. Dispose of material through a licensed waste contractor.

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 separate this product from food, food related materials, animal feedstuffs, seed or fertilisers during transport.



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15. REGULATORY INFORMATION

AICS: All of the significant ingredients in this product 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. **Profeng Australia Pty Ltd** will not be responsible for any damages that may result from reliance on the information contained herein.