

Rygel Trifluralin 480 Selective Herbicide

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Supplier: Rygel Australia Pty Ltd
ACN: 106 839 007
Street Address: 103 Ordish Road, Dandenong South, Vic 3175
Telephone: (03) 9768 2803
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Emergency telephone number: National Poisons Information Centre: Dial 13 1126.

Substance: trifluralin
Product name: Rygel Trifluralin 480 Selective Herbicide
Product Use: A pre-emergence herbicide for the control of annual grasses and certain broadleaf weeds in certain horticultural and agricultural crops as listed in the Directions for Use table on the label
Product Type: Group D Herbicide

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Entity	CAS NO.	Proportion (% weight/weight)
Trifluralin	1582-09-8	480 g/L
Liquid Hydrocarbon	64742-94-5	557 g/L
Other Information	di-n-propylNitrosamine	< 0.5ppm

3. HAZARDS IDENTIFICATION

Classified as hazardous according to criteria of NOHSC

Irritating to eyes. May cause sensitization by skin contact.

Harmful: may cause lung damage if swallowed.

Other Information: Poisons Schedule 5

4. FIRST AID MEASURES

Inhalation: Remove affected person to fresh air until recovered. Apply CPR if there is no breathing and NO pulse.

Ingestion: If swallowed do NOT induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre on 13 11 26 (Aust). Make every effort to prevent vomit from entering the lungs by careful placement of the patient.

Skin: Wash affected areas thoroughly with soap and water. Remove contaminated clothing and laundry before re-use.

Eye: If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.

First Aid Facilities: If poisoning occurs, contact a doctor or Poisons Information Centre on 13 11 26 (Australia).

Advice to Doctor: Treat symptomatically.
If vomiting occurs, solvent present may cause pulmonary pneumonitis.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Water fog, foam, carbon dioxide or dry chemical.

Specific Hazards

Hazardous Combustion Products: If involved in a fire, it will emit hydrogen fluoride, oxides of nitrogen and possibly cyanides.

Protective Equipment: Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces.

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6. ACCIDENTAL RELEASE MEASURES

- Spills & Disposal:** Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect spilled material and waste in sealable open-top type containers for disposal.
- Personal Protection:** For appropriate personal protective equipment (PPE), refer Section 8.
- Environmental Precautions:** This product is a herbicide and spills can damage crops, pastures and desirable vegetation. Prevent from entering drains, waterways or sewers.

7. HANDLING AND STORAGE

- Precautions for Safe Storage:** Store in the closed, original container in a dry, well ventilated area out of direct sunlight. Do not store near oxidisers.
- Do not store below 5°C. Extended storage below 5°C can result in the formation of crystals on the bottom of the container. If crystallisation does occur, store the container on its side at room temperature and rock occasionally until crystals re-dissolve.
- Ensure any crystals are dissolved before adding to the spray tank.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- National occupational exposure limits:** No exposure standards have been set for this product or the active ingredients.
- The manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m³; 15ppm TWA, as total hydrocarbon.
- Engineering Controls:** Handle in well ventilated areas, generally natural ventilation is adequate.
- Personal protection equipment:** When opening the container and preparing the spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles. Sensitive workers should use protective clothing.
- Respiratory Protection:** Do not inhale spray mist.
- Hygiene Measures:** After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash contaminated clothing and safety equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Bright orange, clear liquid
- Odour:** Solvent odour
- Melting Point:** Some crystallisation occurs between 0 and -7°C
- Solubility in Water:** Disperses in water
- Boiling Point:** 183-210°C (for solvent)
- Specific Gravity (H₂O=1):** 1.116
- Vapour Pressure:** 0.5 kPa @ 38°C for solvent, 13.7 mPa @ 25°C for trifluralin
- Vapour Density (Air=1):** 4.8 (solvent)
- Volatile Component:** 51% v/v
- Flash Point:** 103°C
- Flammability:** Combustible C1
- Ignition Temperature:** 443°C (solvent)
- Flammable Limits LEL:** 0.9% (for solvent)
- Flammable Limits UEL:** 6% (for solvent)

10. STABILITY AND REACTIVITY

- Stability:** Stable under normal conditions. Do not store below 5°C.
- Hazardous Polymerization**
- Hazardous polymerisation is not possible.
- Materials to Avoid Prolonged reaction with water can cause slow decomposition and the formation of acid which may attack drums. If a part open drum is to be stored, ensure that no water has been added to the drum.
- Hazardous Reaction Violent reactions between this product and oxidising agents are possible.

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11. TOXICOLOGICAL INFORMATION

Toxicology Information

No harmful effects are expected if the precautions on the label and this MSDS are followed.

Rygel trifluralin (technical) is manufactured to comply with a maximum limit of 0.5ppm di-n-propylNitrosamine; generally, the levels are not detectable at a detection limit of 0.2ppm. The final product specification is set in accordance with the current FAO specification of max 0.5ppm di-n-propylNitrosamine.

- Inhalation:** When applying the product as a spray avoid breathing in spray mists. High vapour concentrations of the solvent while handling the concentrate are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, can be an aesthetic and may have other central nervous system effects.
- Ingestion:** The concentrate is of low toxicity if swallowed. However, swallowing of large amounts may cause injury, mainly due to the solvent. If aspirated into the lung, e.g. from vomiting, the presence of the solvent may result in chemical pneumonitis or other lung damage.
- Skin:** Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis. May cause sensitisation by prolonged skin contact.
- Eye:** The concentrate may cause irritation of the eyes.
- Chronic Effects:** No chronic effects of trifluralin exposure have been documented in the literature over many years of use, other than relatively rare skin sensitisation.
- Carcinogenicity:** Early experiments on animals indicated that trifluralin was a carcinogen. This has since been found to be due to an impurity, di-n-propylNitrosamine, a known carcinogen, present in crude trifluralin at about 80 - 100 ppm. Later experimentation with trifluralin on mice and rats given high doses of material containing 1ppm or less of di-n-propylNitrosamine have not shown any tumour formation. Daily doses for rats were 202-392 mg/kg/day and for mice 256-664 mg/kg/day. Thus trifluralin itself is considered to be non-carcinogenic.

Acute Toxicity-Oral

- LD50 (rat) >10,000 mg/kg for trifluralin
LD50 (mouse) 5,000 mg/kg for trifluralin
In 2 year feeding trials, rats receiving 2,000 mg/kg diet suffered no ill effects.
In 2 year feeding trials, dogs receiving 1,000 mg/kg body weight suffered no ill effects.

Other Information: The Australian Acceptable Daily Intake (ADI) for trifluralin for a human is 0.02 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 2.5 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, 'ADI List', TGA, August 2003).

12. ECOLOGICAL INFORMATION

Other Precautions: Do not spray in high winds. Do not contaminate dams, waterways or sewers with this product.

Environmental Protection: Marine pollutant. Spray drift can cause damage.

Persistence / Degradability: Trifluralin degrades in soil at a relatively moderate rate, about 85 - 90% of the material is lost in normal soil in 1/2 to 1 year.

Acute Toxicity - Fish

The following is data for the active ingredient, trifluralin.

LC50 (96 hr) for young rainbow trout is 0.088 mg/L

LC50 (96 hr) for young bluegill sunfish is 0.089 mg/L

Acute Toxicity -Daphnia

LC50 (48 hr) for daphnia is 0.245 mg/L.

Acute Toxicity - Other Organisms

Birds: Not toxic to birds. LD50 for bobwhite quail is >2,000 mg/kg

Bees: Not toxic to bees. LD50 >100 µg/bee

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13. DISPOSAL CONSIDERATIONS

Container Disposal

Do not use this container for any other purpose.

Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations.

drumMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers. If the label on your container carries the drumMUSTER symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program.

Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for refill or storage. If on-site container disposal is necessary, triple rinse empty container with water, add rinsate to the spray tank. Puncture top, sides and bottom, crush and bury in an approved landfill or bury with at least 500 mm of soil cover away from pasture and crop areas, water supplies and houses. Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION

It is good practice to separate this product from food, food related materials, animal feedstuffs, seed or fertilisers during transport.

U.N. Number: None Allocated

Proper Shipping Name: None Allocated

DG Class: None Allocated

Hazchem Code: None Allocated

Packing Group: None Allocated

Storage and Transport: Considered non dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.

UN Number (Sea Transport): 3082

IMO Class/Packing Group: Class 9; Packing Group III

IMO Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Trifluralin)

15. REGULATORY INFORMATION

Risk Phrase: R36 Irritating to eyes.
R43 May cause sensitization by skin contact.
R65 Harmful: may cause lung damage if swallowed.

Safety Phrase: S13 Keep away from food, drink and animal feeding stuffs.
S2 Keep out of reach of children.
S24 Avoid contact with skin.
S37 Wear suitable gloves.
Poisons Schedule S5
Hazard Category Harmful, Irritant

Packaging & Labelling

CAUTION

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

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