

MATERIAL SAFETY DATA SHEET

Spectra Pacific (Australia) Pty Ltd

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Page 1 of 6
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SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **Spectra Trifluralin 480 Herbicide**

Full Product Name: Spectra Trifluralin 480 Herbicide
Other Names: Trifluralin. Trifluralin is a dinitroaniline compound.
Use: A liquid pre-emergence grass herbicide.
Company: Spectra Pacific (Australia) Pty Ltd
Address: 1/14 Palmer Place, Murarrie Qld 4172
ACN/ABN: 089 133 095
Telephone Number: 07 3907 0744 **Fax Number:** 07 3890 4663
Emergency Contact : 1800 033 111

SECTION 2 HAZARDS IDENTIFICATION

**Classified as hazardous according to criteria of ASCC.
Not classified as a Dangerous Good according to the ADG Code**

Risk Phrases: R22 Harmful if swallowed.
R36/38 Irritating to eyes and skin.
R65 Harmful: May cause lung damage if swallowed.

Safety Phrases: S2 Keep out of reach of children.
S13 Keep away from food, drink and other animal foodstuffs.
S23 Do not breathe vapour.
S24/25 Avoid contact with skin and eyes.
S36/37 Wear suitable protective clothing and gloves.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	CAS NUMBER	PROPORTION
Trifluralin	1582-69-8	480 g/L
Liquid hydrocarbon	64742-94-5	30 - 60 % w/w
Other ingredients determined not to be hazardous		1 - 10%

SECTION 4 FIRST AID MEASURES

FIRST AID

Ingestion: If swallowed do NOT induce vomiting. Give a glass of water. If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 131 126.

Eye contact: Immediately hold eyes open and flood gently with clean water. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. If irritation persists, seek medical advice.

SECTION 4 FIRST AID MEASURES (Continued)

Skin contact: Remove contaminated clothing. Wash skin with soap and water. If skin is irritated, seek medical advice.

Inhalation: Remove to fresh air and observe until recovered. If effects persist for more than about 30 minutes, seek medical advice.

Advice to Doctor: Treat symptomatically. The formulation also contains petroleum distillate that can cause severe pneumonitis or fatal pulmonary oedema if aspirated. Consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is otherwise symptomatic and supportive.

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing media: Combustible liquid (C1) – flash point > 62°C. Extinguish fire using carbon dioxide, foam or dry agent. If not available, use waterfog or fine water spray but ensure all runoff is contained. Contain all runoff.

Hazards from combustion products: On burning will emit toxic fumes. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk to of exposure to vapour or smoke.

Precautions for fire-fighters and special protective equipment: Isolate fire area. Evacuate downwind residents. Wear full protective clothing and self contained breathing apparatus. Do not breathe smoke or vapours generated.

SECTION 6 ACCIDENTIAL RELEASE MEASURES

Emergency procedures / Material and methods for containment and cleanup procedures: Wear protective equipment to prevent skin contamination. In the case of spillage, contain and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as indicated below or according to the Australian Standard 2507 - Storage and Handling of Pesticides. Wear prescribed protective clothing and equipment. Keep out animals and unprotected persons.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling: No smoking, eating or drinking should be allowed where material is used or stored.

When opening the container, preparing the spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles. Wash hands after use.

Conditions for Safe Storage: Not classified as a Dangerous Good. This product is a Schedule 5 Poison (S5) and must be stored, transported and sold in accordance with the relevant Health Department regulations. This product is a combustible liquid (C1) and must be stored away from naked lights, heat sources and oxidising agents. Observe procedures detailed in Australian Standard AS1940-1988 for flammable and combustible liquids.

Store in the closed, original container in a well ventilated area away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight.

Exposure Guidelines:

No exposure limits have been assigned by ASCC to the ingredients in this product.

Biological Limit Values:

No biological limit allocated.

Engineering controls:

Use in ventilated areas where vapours and mists are able to accumulate. Keep containers closed when not in use. No special engineering controls are required.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protective equipment (PPE):

Skin: When opening the container, preparing the spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves and face shield or goggles. Wash thoroughly before smoking, eating or using toilet facilities. Wash hands after use.

Respiratory Protection: Generally not required. Use of a respirator may be required in certain circumstances to protect from inhalation of spray mist.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear bright orange/yellow liquid.
Odour:	Petroleum type odour.
Boiling point:	No data available.
Freezing point:	No data available.
Melting Point:	Some crystallisation occurs between 0 and -7°C.
Specific Gravity:	1.0 at 20°C.
Solubility in Water:	Emulsifies in water- emulsifiable concentrate formulation.
pH:	No data available.
Flammability:	Combustible liquid.
Corrosive hazard:	Not corrosive.
Flashpoint (°C):	> 62°C.
Flammability Limits (%):	Not established.
Poisons Schedule:	S5.

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: Product is considered stable in ambient conditions for a period of at least 2 years after manufacture. Product is unlikely to react or decompose under normal storage conditions.

Conditions to avoid: Do not store for prolonged periods in direct sunlight.

Incompatible materials: Strong acids, strong bases and strong oxidising agents.

Hazardous decomposition products: Hazardous decomposition products include carbon dioxide, carbon monoxide and nitrogen oxides.

Hazardous reactions: No particular reactions to avoid.

SECTION 11 TOXICOLOGICAL INFORMATION

No specific data is available for this product as no toxicity tests have been conducted on this product. Information presented is our best judgement based on similar products and/or individual components. As with all products for which limited data is available, caution must be exercised through the use of protective equipment and handling procedures to minimise exposure.

Acute Toxicity: Trifluralin is practically nontoxic to test animals by oral, dermal, or inhalation routes of exposure. Nausea and severe gastrointestinal discomfort may occur after eating Trifluralin. Trifluralin does not cause skin irritation but may produce slight eye irritation. Skin sensitization (allergies) may occur in some individuals. Inhalation may cause irritation of the lining of the mouth, throat, or lungs.

Potential Health Effects:

ACUTE EFFECTS

Swallowed: The acute oral LD₅₀ for technical Trifluralin in rats is greater than 10,000 mg/kg. Swallowing can cause nausea, vomiting and central nervous system depression caused by the solvent in this product. If patient shows sign of central nervous system depression (like those of drunkenness) there is a greater chance of the patient breathing in vomit and causing damage to the lungs. Breathing in vomit may lead to aspiration pneumonia (inflammation of the lung).

SECTION 11 TOXICOLOGICAL INFORMATION (Continued)

- Eye:** This formulated product may be irritating to the eyes. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.
- Skin:** The dermal LD₅₀ for technical Trifluralin in rabbits > 2000 mg/kg. This product may be irritating to the skin. Product will have a degreasing action on the skin. Repeated or prolonged exposure may lead to irritant contact dermatitis.
- Inhaled:** The 1-hour inhalation LC₅₀ for technical Trifluralin (rats) > 2.8 mg/L. Inhalation of mists or sprays may produce respiratory irritation. Breathing in vapours may result in headaches, dizziness and possible nausea. Breathing high concentrations can produce central nervous system depression, which can lead to loss of coordination, impaired judgement, and in circumstances of prolonged exposure, unconsciousness.

Long Term Exposure:

Chronic toxicity: Prolonged or repeated skin contact with Trifluralin may cause allergic dermatitis. No toxicity was observed in dogs fed 25 mg/kg/day for 2 years. However, another study observed decreased red blood cell counts and increases in methaemoglobin, total serum lipids, triglycerides, and cholesterol at 18.75 mg/kg/day. Trifluralin has been shown to cause liver and kidney damage in other studies of chronic oral exposure in animals.

Reproductive effects: The reproductive capacity of rats fed dietary concentrations of Trifluralin was unimpaired through four successive generations. Loss of appetite and weight loss followed by miscarriages were observed when pregnant rabbits were fed high doses. Foetal weight decreased and there was an increase in the number of foetal runts at the 500 mg/kg/day dosage. It is unlikely effects on reproduction will be produced in humans at expected exposure levels.

Teratogenic effects: No abnormalities were observed the offspring of rats fed for four generations. Studies show no evidence that Trifluralin is teratogenic. **Mutagenic effects:** No evidence of mutagenicity was observed when Trifluralin was tested in live animals, and in assays using bacterial and mammalian cell cultures.

Carcinogenic effects: In a 2-year study of rats fed 325 mg/kg/day, the highest dose tested, malignant tumours developed in the kidneys, bladder, and thyroid. However, more data are needed to characterize its carcinogenicity. **Organ toxicity:** Liver, kidney, and thyroid damage appear to be the main toxic effects in chronic animal studies.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Toxicology: No data is available on this product. The active ingredient, Trifluralin is practically nontoxic to birds. The LD₅₀ in bobwhite quail, female mallards and pheasants > 2000 mg/kg. Trifluralin is very highly toxic to fish and other aquatic organisms. The 96-hour LC₅₀ in rainbow trout is 0.02 to 0.06 mg/L, and 0.05 to 0.07 mg/L in bluegill sunfish. The 96-hour LC₅₀ in channel catfish = 1.4 to 3.4 mg/L. Variables such as temperature, pH, life stage, or size may affect the toxicity of the compound. Trifluralin is highly toxic to Daphnia with a 48-hour LC₅₀ of 0.5 to 0.6 mg/L. Trifluralin shows a moderate tendency to accumulate in aquatic organisms. Although extremely high application rates (100 mg/kg) of Trifluralin has been shown to be toxic to earthworms, label application rates will result in soil residues of approximately 1 ppm Trifluralin, a level that had no adverse effects on earthworms. Nontoxic to bees.

Environmental Fate: No data is available on this product. The active ingredient, trifluralin, is biodegradable. It will not accumulate in the soil or water or cause long term problems. Trifluralin has moderate to high persistence in the soil environment, depending on conditions. Trifluralin is subject to degradation by soil microorganisms. Trifluralin may be decomposed by UV light or may volatilize if left exposed to the air. Half-lives of Trifluralin in the soil vary from 45 to 60 days to 6 to 8 months. After 6 months to 1 year, 80 to 90% of its activity will be gone. Trifluralin is strongly adsorbed to soils and nearly insoluble in water. Trifluralin is nearly insoluble in water. It will probably be found adsorbed to

SECTION 12 ECOLOGICAL INFORMATION (Continued)

soil sediments and particulates in the water column. Trifluralin inhibits the growth of roots and shoots when it is absorbed by newly germinated plants. Trifluralin residues in crop plants will occur only in root tissues which are in direct contact with contaminated soil. Trifluralin is not translocated into the leaves, seeds, or fruit of most plants. On most crops, Trifluralin applied to the leaves has no effect, but on certain crops, such as tobacco and summer squash, leaf distortion may occur.

SECTION 13 DISPOSAL CONSIDERATIONS

Spills and Disposal: Persons involved in cleanup require adequate skin protection - see section 8. In case of spillage, contain and absorb spilled material with absorbent material such as clay, sand or cat litter and dispose of waste as indicated below or in accordance to the Australian Standard 2507- Storage and Handling of Pesticides. Keep out animals and unprotected persons. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to the drums of wastes already collected and label contents. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities.

Disposal of empty containers: 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, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Do not cut or weld metal containers. Vapours that form inside may create an explosion hazard.

SECTION 14 TRANSPORT INFORMATION

Road & Rail Transport: This product is not classified as a Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail. Product is a C1 combustible liquid for storage purposes. This product is a Schedule 5 Poison (S5) and must be stored, transported and sold in accordance with the relevant Health Department regulations.

Marine and Air Transport: Product is a Marine Pollutant according to International Maritime Dangerous Goods (IMDG) Code and the International Air Transport Association (IATA). If transporting by sea or air the following Dangerous Goods Classification applies:-
UN 3082, Class 9 (Miscellaneous Dangerous Goods), Packing Group III, Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains 48% Trifluralin).

SECTION 15 REGULATORY INFORMATION

Under the Standard for Uniform Scheduling of Drugs and Poisons (SUSDP), this product is a schedule 5 poison.

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 63438.

This product is classified as a Hazardous Substance under the criteria of NOHSC Australia. Xn: Harmful, Xi irritant.

This product is not classified as a Dangerous Good according to the ADG Code (6th Ed).

This product is classified as a Dangerous Good according to International Maritime Dangerous Goods (IMDG) Code and the International Air Transport Association (IATA).

SECTION 16 OTHER INFORMATION

Issue Date: 5 February 2009. (First issue).

Key to abbreviations and acronyms used in this MSDS:

ADG Code	Australian Dangerous Goods Code (for the transport of dangerous goods by Road and Rail).
ASCC	Australian Safety & Compensation Council (formally known as the National Occupational Health & Safety Commission (NOHSC)).
Carcinogen	An agent which is responsible for the formation of a cancer.
Genotoxic	Capable of causing damage to genetic material, such as DNA.
NOHSC	National Occupational Health and Safety Commission.
OCS	Office of Chemical Safety.
PPE	Personal protective equipment.
Teratogen	An agent capable of causing abnormalities in a developing foetus.
TWA	The Time Weighted Average airborne concentration over an eight-hour working day, for a five day working week over an entire working life.

References

1. "Search Hazardous Substances". Australian Safety and Compensation Council website. (2009).
2. "Approved Criteria for Classifying Hazardous Substances" 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

End MSDS