MATERIAL SAFETY DATA SHEET

eChem (Australia) Pty Ltd
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A.C.N. 089 133 095

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Emergency Contact: 1800 033 111

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **eChem THIDIAZURON 500 SC Liquid Cotton Defoliant**

Full Product Name: *e*Chem Thidiazuron 500 SC Liquid Cotton Defoliant
Other Names: Thidiazuron.
Use: For the defoliation of cotton prior to harvest.
Company: *e*Chem (Australia) Pty Ltd
Address: 419 Frome Street, Moree NSW 2400
ACN/ABN: 089 133 095
Telephone Number: 02 6750 8019 **Fax Number:** 02 6752 3123
Emergency Contact : 1800 033 111

SECTION 2 HAZARDS IDENTIFICATION

Classified as hazardous according to criteria of Safe Work Australia.
Not classified as a Dangerous Good according to the ADG Code.

Risk Phrases: None allocated.

Safety phrases:
S2 Keep out of reach of children.
S25 Avoid contact with eyes.
S37 Wear Suitable gloves.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	*CAS NUMBER*	*PROPORTION (% w/w)*
Thidiazuron	51707-55-2	49%
Propane-1,2-diol	57-55-6	1-10%
Other ingredients (including water) determined not to be hazardous		to 100%

SECTION 4 FIRST AID MEASURES

FIRST AID

Ingestion: If swallowed contact a doctor or Poisons Information Centre. Phone 131126.

Eye contact: Flush with plenty of water. If irritation occurs and persists, seek medical advice.

Skin contact: Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use.

Inhalation: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, seek medical advice.

Advice to Doctor: Symptoms such as haemolytic anaemia, apathy (found following high doses in animals) may occur. Treat symptomatically. Medicinal charcoal may be administered.

SECTION 5 FIRE FIGHTING MEASURES

Specific Hazard: Generally considered a low risk due to the water content, but once the water has evaporated the product is combustible.

Extinguishing media: Water fog, fine water spray, foam or dry chemical. CO_2 may be ineffective on larger fires due to lack of cooling capacity, which may result in re-ignition. Contain all runoff.

Hazards from combustion products: Product is likely to decompose after heating to dryness and continued strong heating and will emit toxic fumes.

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

Emergence procedures / Material and methods for containment and cleanup procedures: Wear protective equipment to prevent skin and eye contamination. In case of spillage, contain and absorb spilled material with absorbent material such as clay, sand or cat litter. Vacuum, shovel or pump waste into an approved drum. Dispose of drummed wastes, in accordance with the requirements of Local or State Waste Management Authorities. Keep material out of streams and sewers.

SECTION 7 HANDLING AND STORAGE

Precautions for safe Handling: No smoking, eating or drinking should be allowed where material is used or stored. May irritate the eyes. Avoid contact with eyes. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow length PVC gloves. After each day's use, wash gloves and contaminated clothing. Wash hands after use.

Conditions for safe Storage and Transport: Keep out of reach of children. Store in original containers only. Store in a cool, dry and well ventilated location. Avoid excess heat. Not classified as a Dangerous Good.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines:
Exposure guidelines have not been established for this product by Safe Work Australia, however the following exposure guideline is for an ingredient in this product.

Atmospheric Contaminant	Exposure Standard (TWA)	STEL (mg/m³)
Propane-1,2-diol	474 mg/m³ (150 ppm)	-

TWA = Time-weight Average STEL = Short term Exposure Limit

Biological Limit Values:
No biological limit allocated

Engineering controls:
Use in ventilated areas. No special engineering controls are required.

Personal Protective equipment (PPE):
General: When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow length PVC gloves. After each day's use, wash gloves and contaminated clothing. Wash hands after use.

Personal Hygiene: Clean water should be available for washing in case of eye or skin contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Beige Liquid with negligible odour.
Boiling point: Approximately 100°C
Freezing point: Approximately 0°C
Specific Gravity: 1.13 g/mL.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES (Continued)

Solubility in Water: Forms a suspension in water.
pH: Approximately 7.7
Flammability: Not flammable.
Corrosive hazard: Not corrosive.
Flashpoint (°C): Not established. Water based product.
Flammability Limits (%): Not established.
Poisons Schedule: Not a scheduled poison.

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

Conditions to avoid: Avoid oxidizing materials.

Incompatible materials: Incompatible with strong acids and bases.

Hazardous decomposition products: Hazardous decomposition products include carbon and nitrogen oxides.

Hazardous reactions: This product will not undergo polymerisation.

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.

Potential Health Effects:

Swallowed: Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause nausea and vomiting.

Eye: May cause eye irritation. Mist may cause eye irritation.

Skin: Prolonged and repeated contact may cause slight irritation. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhaled: No adverse effects are anticipated from single exposure to vapour. Mist may cause irritation of upper respiratory tract (nose and throat).

Thidiazuron:
Acute oral LD_{50} (rat) > 4000 mg/kg.
Acute Dermal LD_{50} (rabbit) > 4000 mg/kg.
Acute inhalation LC_{50} (rat) > 4.33 mg/L/4 hours.
Acute Skin irritation - non sensitizing.
Acute eye irritation - mild eye irritant.
Acute skin sensitization - not a sensitizer

Long Term Exposure: In chronic toxicity studies in rats and mice, thidiazuron showed no toxic effects. In a chronic dog study, toxic haemolytic anemia associated with compensatory haemopoiesis was noted in the high dose animals. Thidiazuron was not carcinogenic or mutagenic and did not cause reproductive effects in animal studies.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Toxicology: No data is available on this product. Based largely or completely on information for the active ingredient. The active ingredient is considered to have very low toxicity to aquatic organisms, birds and bees. LC_{50} (96 hr) Rainbow trout > 19 mg/L; LC_{50} (96 hr) Bluegill sunfish = 32 mg/L. 48 hour EC_{50} (Daphnia) > 10 mg/L. Acute oral toxicity LD_{50} (Japanese quail) > 3160 mg/kg. 14 day LC_{50} (earthworms) > 1400 mg/kg.

SECTION 12 ECOLOGICAL INFORMATION (Continued)

Environmental Fate: No data is available on this product. Based largely or completely on the active ingredient Log P_{ow} is 1.77. Risk of bioaccumulation in an aquatic species is low. Thidiazuron is strongly adsorbed by soil, with half-lives in soil of 28 to 144 days in aerobic soil and 28 days in anaerobic soils.

SECTION 13 DISPOSAL CONSIDERATIONS

Spills and Disposal: Persons involved in cleanup require adequate skin and eye 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 a suitable solution (i.e. organic solvent, detergent, bleach or caustic) 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, in compliance with relevant Local, State or Territory government regulations. Empty containers and product should not be burnt.

SECTION 14 TRANSPORT INFORMATION

Road & Rail Transport: This product is not classified as a Dangerous Good. No special storage or transport requirements necessary.

Marine and Air Transport: This product is not classified as a Dangerous Good.

SECTION 15 REGULATORY INFORMATION

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is not a scheduled poison.
This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 55963.
This product is classified as a Hazardous Substance under the criteria of Safe Work Australia.
This product is not classified as a Dangerous Good under the Australian Code for the Transport of Dangerous Goods by Road and Rail.
Requirements concerning special training:
Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

SECTION 16 OTHER INFORMATION

Issue Date: 17 June 2013 (Update of contact details).

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).
Ataxia:	Inability to control the coordinate movements of the muscles.
Bradycardia:	Is a resting heart rate of under 60 beats per minute (adults).
Carcinogen:	An agent which is responsible for the formation of a cancer.
Genotoxic:	Capable of causing damage to genetic material, such as DNA.
Mutagenic:	Capable of inducing a genetic mutation in an organism.
NOHSC:	National Occupational Health and Safety Commission.

SECTION 16 OTHER INFORMATION (Continued)

LD_{50}: Median Lethal Dose. A statistically derived single dose of a substance that can be expected to cause death in 50% of dosed animals.
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.
Safe Work Australia: Formally known as Australian Safety & Compensation Council (ASCC) which was formally known as the National Occupational Health & Safety Commission (NOHSC).

References

1. "Search Hazardous Substances". Safe Work Australia HSIS website. (2013).
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 of MSDS