

# MATERIAL SAFETY DATA SHEET



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Page 1 of 5  
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**Emergency Contact:**  
**1800 033 111**

## SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name: eChem THI-ULTRA  
Liquid Cotton Defoliant**

**Full Product Name:** eChem Thi-Ultra Liquid Cotton Defoliant.  
**Other Names:** Thidiazuron, Diuron.  
**Use:** For the defoliation of cotton prior to harvest.  
**Company:** eChem (Australia) Pty Ltd.  
**Address:** Level 4, Lantos Place 80 Stamford Road, Indooroopilly QLD 4068  
**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.  
Combustible liquid (C2).**

**Risk Phrases:** R36/38 Irritating to the eyes and skin.  
R40 Limited evidence of a carcinogenic effect.

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

## SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

<b>Ingredients:</b>	<b>CAS NUMBER</b>	<b>PROPORTION (% w/w)</b>
<b>CHEMICAL</b>		
Thidiazuron	51707-55-2	120 g/L
Diuron	330-54-1	60 g/L
Other ingredients 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. Wash mouth out with water and give water to drink. DO NOT induce vomiting.

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

**SECTION 4 FIRST AID MEASURES (Continued)**

**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. If a large amount has been ingested, the following should be considered: Monitor the following - cardiac function, kidney function, red blood cells, met-haemoglobin level, ECG and serum potassium.

Gastric lavage and charcoal administration may be considered. Anticonvulsant therapy is not appropriate. Methylene blue and toluidine blue are antidotes for diuron poisoning. There is no antidote for thidiazuron poisoning. Oxygen may be administered. Bed rest is recommended. Recovery is expected to be spontaneous.

**SECTION 5 FIRE FIGHTING MEASURES**

**Specific Hazard:** Generally considered a low risk. Combustible liquid (C2) – flashpoint > 150°C.

**Extinguishing media:** CO<sub>2</sub>, dry chemical or alcohol resistant foam. Water fog, fine water spray may be used if no alternatives – contain all run-off.

**Hazards from combustion products:** Thermal decomposition and burning may produce toxic by-products. Nitrogen oxides, sulfur dioxide, hydrogen chloride, hydrogen cyanide and carbon dioxide may be released in a fire.

**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 cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves. In case of spillage, contain and absorb spilled material with absorbent material such as clay, sand or cat litter and transfer to drums. 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. Will irritate eyes and skin. Avoid contact with eyes and skin. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves. Wash hands after use. After each day's use, wash gloves and contaminated clothing.

**Conditions for Safe Storage:** Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight when not in use. This product is classified as a C2 (Combustible Liquid) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to state regulations for storage and transport requirements. Do not store or use near naked flame, or heat sources. Do not cut or weld container.

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure Guidelines:**

An exposure standard for diuron has been established by Safe Work Australia: TWA = 10 mg/m<sup>3</sup>.

**Biological Limit Values:**

No biological limit allocated.

**SECTION 8 | EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)****Engineering controls:**

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

**Personal Protective equipment (PPE):**

When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves. Wash hands after use. After each day's use, wash gloves and contaminated clothing.

**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.

**SECTION 9 | PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Light grey to light brown Liquid with rancid odour.
<b>Boiling point:</b>	Not available.
<b>Freezing point:</b>	Not available.
<b>Specific Gravity:</b>	1.01 g/mL.
<b>Solubility in Water:</b>	Forms a suspension in water.
<b>pH:</b>	Approximately 7.5 to 9
<b>Flammability:</b>	C2 combustible liquid.
<b>Corrosive hazard:</b>	Not corrosive.
<b>Flashpoint (°C):</b>	> 150°.
<b>Flammability Limits (%):</b>	Not established.
<b>Poisons Schedule:</b>	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 strong oxidizing agents. Avoid heat and naked flames.

**Incompatible materials:** Incompatible with strong oxidizers.

**Hazardous decomposition products:** Thermal decomposition and burning may produce toxic by-products. Nitrogen oxides, sulfur dioxide, hydrogen chloride, hydrogen cyanide and carbon dioxide may be released in a fire.

**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.

**Potential Health Effects:**

No toxicity tests have been conducted on this product. The following data is for the individual active ingredients.

**Short Term Exposure:** Eye contact may cause irritation. The active ingredient, thidiazuron, has shown low oral, dermal and inhalation toxicity and is not a skin sensitiser.

**Thidiazuron:** Acute oral LD<sub>50</sub> (rat) > 4000 mg/kg.  
Acute Dermal LD<sub>50</sub> (rabbit) > 4000 mg/kg.  
Acute inhalation LC<sub>50</sub> (rat) > 2.3 mg/L/4 hours.  
Acute Skin irritation - non irritating.  
Acute eye irritation - mild eye irritant.  
Acute skin sensitization - not a sensitizer

**SECTION 11 TOXICOLOGICAL INFORMATION (Continued)**

**Diuron:** Acute oral LD<sub>50</sub> (rat) > 3400 mg/kg.  
Acute Dermal LD<sub>50</sub> (rabbit) > 5000 mg/kg.  
Acute inhalation LC<sub>50</sub> (rat) > 5 mg/L/4 hours.  
Acute Skin irritation – Slightly irritating.  
Acute eye irritation - non irritating.  
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 anaemia 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.

In chronic toxicity studies in animals, diuron has shown no evidence of oncogenic effects and no evidence of teratogenic effects. Safe Work Australia has classified diuron as a possible carcinogen.

**Reproductive Effects:** Diuron can cause reproductive defects at high doses.

**Teratogenic Effects:** Diuron is teratogenic at high doses. **Mutagenic Effects:** No evidence of mutagenic effects.

**Carcinogenic Effects:** Limited evidence indicates that high level exposures to diuron cause cancer.

**Organ Toxicity:** Low doses of diuron over extended periods of time can cause enlargement to the liver and the spleen.

**SECTION 12 ECOLOGICAL INFORMATION**

**Environmental Toxicology:** Thidiazuron is considered to have very low toxicity to aquatic organisms, birds and bees. Log P<sub>ow</sub> is 1.77. Risk of bioaccumulation in an aquatic species is low.

Diuron is considered toxic to fish and aquatic organisms, but not toxic to honey bees. Half life in soil is 90 to 180 days.

*Thidiazuron:*

96 hour LC<sub>50</sub> (Rainbow trout, Bluegill sunfish and Catfish) > 1000 mg/L.

48 hour EC<sub>50</sub> (Daphnia) > 10 mg/L.

Acute oral toxicity LD<sub>50</sub> (Japanese quail) > 3160 mg/kg.

14 day LC<sub>50</sub> (earthworms) > 1400 mg/kg.

*Diuron:*

96 hour LC<sub>50</sub> (Rainbow trout, Golden orfe and Bluegill sunfish) = 5 to 7 mg/L.

48 hour EC<sub>50</sub> (Daphnia) 1.4 mg/L.

8 day dietary LC<sub>50</sub> (Bobwhite quail) 1730 mg/kg.

8 day dietary LC<sub>50</sub> (Japanese quail, Mallard ducklings, Pheasant chicks) > 5000 mg/kg.

**Environmental Fate:** 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. Diuron is moderately to highly persistent in soils. Residue half-lives are from 1 month to 1 year. Some pineapple fields contained residues 3 years after the last application. Mobility in the soil is related to organic matter and to the type of the residue. The metabolites are less mobile than the parent compound. Diuron is relatively stable in neutral water. Microbes are the primary agents in the degradation of Diuron in aquatic environments.

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Spills and Disposal:** Keep material out of streams and sewers. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities. In rural areas contact ChemClear <http://www.chemclear.com.au> for help with collection of unwanted rural chemicals.

**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 empty 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 exempt from classification as a Dangerous Good in packs less than 3,000 kg or litres under the Australian Code for the Transport of Dangerous Goods by Road and Rail. For bulk shipments this product is a class 9, UN 3082. (See special provision AU01).

**Marine and Air Transport:** This product is classified as 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 Diuron). Hazchem code ●3Z. Hazard Identification Number (HIN) 90.

**SECTION 15 REGULATORY INFORMATION**

This product is classified as a Hazardous Substance under the criteria of Safe Work Australia. Xi: Irritant. Xn: Harmful.

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is not a scheduled poison.

This product is not classified as a Dangerous Good according to the ADG Code for packs less than 3000 litres (SP AU01) (7<sup>th</sup> Ed).

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 59134.

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 address 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).

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.

LD<sub>50</sub>: 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". 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 of MSDS*