

MATERIAL SAFETY DATA SHEET



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Emergency Contact:
1800 033 111

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: eChem Clethodim 240 Herbicide

Full Product Name: eChem Clethodim 240 Herbicide.
Other Names: Clethodim, cyclohexene oxime herbicide, Group A Herbicide.
Use: A selective agricultural liquid herbicide.
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
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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 (C1).**

Risk Phrases: R20 Harmful by inhalation.
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 or spray.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

| <i>CHEMICAL</i> | <i>CAS NUMBER</i> | <i>PROPORTION</i> |
|--|-------------------|-------------------|
| Clethodim | 99129-21-2 | 240 g/L |
| Aromatic hydrocarbon | 64742-94-5 | 606 g/L |
| Other ingredients determined not to be hazardous | | 25% w/w |

SECTION 4 FIRST AID MEASURES

FIRST AID

Ingestion: If swallowed do not induce vomiting. Wash mouth with water and give water to drink. If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 131 126.

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

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. Seek medical advice if effects persist.

SECTION 4 FIRST AID MEASURES (Continued)

Advice to Doctor: Treat symptomatically. The principal hazard is aspiration of the solvent into the lungs resulting in chemical pneumonitis. Consideration should be given to gastric lavage with an endotracheal tube in place.

SECTION 5 FIRE FIGHTING MEASURES

Specific Hazard: This product is a C1 combustible liquid.

Extinguishing media: Use carbon dioxide, dry chemical or foam. If no alternative use water fog and contain all run off. Violent steam generation or eruption may occur if directed water stream is applied on hot liquids. If containers are ruptured contain all runoff.

Hazards from combustion products: On burning will produce toxic and noxious vapours, including carbon oxides, nitrogen oxides etc.

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. Evacuate personnel to a safe area.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Emergency procedures: Isolate and post spill area. Keep out unprotected persons and animals. Wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and face shield or goggles. Large spills should be dyked. Absorb spilled material with absorbent material such as sand, clay or cat litter. Vacuum, shovel or pump spilled material into an approved container and dispose of waste as indicated in section 13 or according to the Australian Standard 2507 - Storage and Handling of Pesticides. Keep material out of streams and sewers.

This product is a herbicide and spills can damage crops, pastures and desirable vegetation. Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

SECTION 7 HANDLING AND STORAGE

Precautions for safe Handling: No smoking, eating or drinking should be allowed where material is used or stored. Harmful if swallowed. Will irritate the eyes and skin. When preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and face shield or goggles. If product in eyes, wash it out immediately with water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and face shield or goggles and contaminated clothing.

Conditions for safe Storage: This product is classified as a C1 (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. This product is a Schedule 5 Poison (S5) and must be stored, transported and sold in accordance with the relevant Health Department regulations. Not classified as a Dangerous Good. 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. Protect from frost.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**National Exposure Standards:**

No exposure standard has been assigned by Safe Work Australia to this material.

Biological Limit Values:

No biological limit allocated.

Engineering controls:

Keep containers closed when not in use. No special engineering controls are required, however make sure that the work environment remains clean and that vapours and mists are minimised.

SECTION 8 | EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)**Personal Protective equipment (PPE):**

General: When preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and face shield or goggles. If product in eyes, wash it out immediately with water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and face shield or goggles and contaminated clothing.

Personal Hygiene: 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. Shower at the end of the workday.

SECTION 9 | PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------|---|
| Appearance: | Clear amber liquid. |
| Odour: | Aromatic odour. |
| Boiling point: | No data available. |
| Freezing point: | No data available. |
| Specific Gravity: | Approximately 1.1. |
| Solubility in Water: | Emulsifies in water. |
| pH: | Approximately 3 - 4. |
| Flammability: | Combustible liquid. |
| Flashpoint (°C): | > 61°C. |
| Poisons Schedule: | This product is a schedule 5 (S5) poison. |

SECTION 10 | STABILITY AND REACTIVITY

Chemical Stability: Product is considered stable for a period of at least 2 years.

Conditions to avoid: Avoid exposure to heat and naked flame. Unstable at extreme pH's.

Incompatible materials: Incompatible with strong oxidizing agents.

Hazardous Decomposition Products: This product is will decompose when burnt. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Also nitrogen and its compounds and oxides, in some circumstances hydrogen cyanide gas.

Hazardous Reactions: Avoid contact of the concentrate with strong alkalis and alkaline materials such as lime. Does not polymerise.

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:**ACUTE EFFECTS**

| | |
|-------------------|---|
| Swallowed: | Harmful. Acute Oral LD ₅₀ > 1630 mg/kg (male rats) and 1360 mg/kg (female rats) for Clethodim technical. |
| Eye: | The concentrate maybe irritating to the eyes. Prolonged contact with the concentrate may cause damage to the eye. |
| Skin: | This product may be irritating to the skin. Acute dermal LD ₅₀ > 5,000 mg/kg. |
| Inhaled: | Inhalation of mists or sprays may produce respiratory irritation. Expected to be moderately toxic by inhalation. |

Long Term Exposure: This product contains a solvent mixture. Reports have associated repeated and prolonged occupational overexposures to solvents with permanent brain and nervous system damage. Symptoms reported include fatigue, concentration difficulties, anxiety, depression, rapid mood swings

SECTION 11 TOXICOLOGICAL INFORMATION (Continued)

and short-term memory loss. Since many other diseases cause some or all of these symptoms, a doctor should be consulted if any appear. Overall, this product is not expected to be a chronic hazard when used according to the label directions.

Studies with high doses of clethodim technical in mice, rats and dogs, indicated decreased body weights, increased liver size (increased liver weights and hypertrophy) and anaemia (decreased haemoglobin, hematocrit or erythrocyte counts).

In chronic studies with clethodim technical in the mouse, rat and dog, similar effects as seen in sub chronic have been noted. No treatment related increases in neoplasms were observed in any study.

Teratology/development toxicity: Developmental toxicity in rats and rabbits was observed only at maternally toxic dose levels of clethodim technical.

Reproductive toxicity: No reproductive toxicity was observed in a study with rats exposed to clethodim technical for two generations.

Mutagenicity: Clethodim technical does not present any genetic hazard to intact animal systems.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Toxicology: Low toxicity to birds. The dietary LC₅₀ in mallard ducks > 6000 mg/kg. Acute oral LD₅₀ bobwhite quail > 2000 mg/kg. Moderate toxicity to aquatic organisms. The reported 96-hour LC₅₀ values for rainbow trout is 67 mg/L and bluegill sunfish 120 mg/L. The 48-hour LC₅₀ for Daphnia (water flea), an important food source for freshwater fish, is 120 mg/L. The EC₅₀ (5 days) for fresh water algae is 57.8 mg/L. Low toxicity to honeybees contact LC₅₀ > 100 µg/bee. The reported LC₅₀ values for earthworms in soil is 454 mg/kg.

Environmental Fate: Clethodim is of low persistent in most soils with T₅₀ = 3 days. Breakdown is mainly by aerobic processes and photolysis is accepted as making a contribution to breakdown. In water, clethodim is highly persistent with half-life's of 128 days in the aqueous phase and 214 days in the sediment. The reported hydrolysis half life at pH 7-9 is 300 days. Clethodim is rapidly degraded on the leaf surfaces by an acid-catalysed reaction and photolysis. The remaining clethodim will rapidly penetrate the cuticle and enter the plant.

SECTION 13 DISPOSAL CONSIDERATIONS**Spills and Disposal:****1) After intended use - 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 an approved waste management facility is not available bury the empty packaging 500 mm below the surface 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. DO NOT burn empty containers or product.

Do not cut or saw empty containers, as there is the possibility that fumes inside the container maybe ignited and cause the container to explode.

2) After spill or accident

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.

SECTION 14 TRANSPORT INFORMATION

Transport: eChem Clethodim 240 Herbicide is not classified as a Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail, the International Maritime Dangerous Goods (IMDG) Code or the International Air Transport Association (IATA).

This product is a Schedule 5 Poison (S5) and must be stored, transported and sold in accordance with the relevant Health Department regulations.

SECTION 15 REGULATORY INFORMATION

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

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 68708.

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

eChem Clethodim 240 Herbicide is not classified as Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail, International Maritime Dangerous Goods (IMDG) Code or the International Air Transport Association (IATA).

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: 10 June 2013. Valid for 5 years. (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.

Mutagenic: Able to produce a mutation (a change in the genetic material of cells).

Neurotoxicity: An adverse change in the structure or function of the nervous system.

Oedema: Accumulation of fluid in tissues.

PPE: Personal protective equipment.

Teratogen: An agent capable of causing abnormalities in a developing foetus, that is causing birth defects.

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 MSDS