

MATERIAL SAFETY DATA SHEET

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Date of Issue: March 2013
MSDS No. FMC/CLOD240/1

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: FMC Clodinafop 240 Herbicide

Other Names: Clodinafop-Propargyl + Cloquintocet-Mexly, a Group A Herbicide.
Use: Agricultural herbicide for the post-emergent control of grass weeds wheat.
Company: FMC Crop Protection Pty Ltd.
Address: 5 Palmer Place, Murarrie, Qld 4172
Telephone Number: 07 3908 9222 **Fax Number:** 07 3908 9221
Emergency Telephone Number: 1800 033 111 (All hours - Australia wide).

SECTION 2 HAZARDS IDENTIFICATION

**Classified as Hazardous according to criteria of the Safe Work Australia.
Not classified as a Dangerous Good according to the ADG Code.
Combustible Liquid (C1).**

Risk phrases: R22 Harmful if swallowed.
R36/38 Irritating to the eyes and skin.
R43 May cause sensitisation by skin contact.
R65 Harmful: may cause lung damage if swallowed.
R66 Repeated exposure may cause skin dryness and cracking.
R67 Vapours may cause drowsiness and dizziness.

Safety Phrases: S13 Keep away from food, drink, and animal feeding stuffs.
S2 Keep out of reach of children.
S24/25 Avoid contact with skin and eyes.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	CAS NUMBER	PROPORTION
Clodinafop-Propargyl	105512-06-9	240 g/L
Cloquintocet-Mexly	99607-70-2	60 g/L
N-Methyl pyrrolidone	872-50-4	100 g/L
Liquid hydrocarbon	64742-94-5	575 g/L
Other ingredients (considered non-hazardous)		balance

SECTION 4 FIRST AID MEASURES

Ingestion: If swallowed do NOT induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre phone Australia 13 11 26. 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 launder before re-use.

Eye: If in eyes, hold eyelids open and wash with copious amounts of water until chemical is removed. Seek medical advice immediately.

Inhalation: Remove affected person to fresh air until recovered. If symptoms develop or persist, seek medical advice.

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; therefore, vomiting is not recommended, and lavage requires intubation. Activated charcoal and cathartics will assist gastrointestinal tract evacuation.

SECTION 5 | FIRE FIGHTING MEASURES

Specific Hazard: This product is a C1 combustible liquid. Eruption of containers is likely if confined at high temperatures. Cool intact containers with water to reduce drum pressure.

Extinguishing media: Foam, CO₂ or dry chemical. Soft stream water fog or fine water spray if no alternatives. Contain all runoff.

Hazards from combustion products: Product will decompose when burnt and will emit toxic and noxious 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. Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.

SECTION 6 | ACCIDENTAL RELEASE MEASURES

Emergency procedures: Isolate and post spill area. Wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat, elbow-length butyl rubber gloves and face shield or goggles. In the case of spillage, stop leak if safe to do so, and contain spill. 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. Keep out unprotected persons and animals. Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

Material and methods for containment and cleanup procedures: 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. Absorb, as above, any excess liquid and add both solutions to the drums of waste already collected. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities.

SECTION 7 | HANDLING AND STORAGE

Precautions for Safe Handling: Keep out of reach of children. Ensure containers are kept closed until using product. When preparing spray wear PVC or rubber apron, overalls, elbow-length PVC gloves and face shield. When using the prepared spray wear face shield. Wash hands after use.

Conditions for Safe Storage: DO NOT store near (or allow to contact) fertilizers, fungicides or pesticides. Store in the closed original container, in a cool well ventilated area, out of direct sunlight. Store in a room or place away from children, animals, food, feed stuffs, seed and fertilizers. This product is classified as a C1 (Combustible Liquid) for the purpose of storage and handling, in accordance with the requirements of AS 1940. This product is a Schedule 6 Poison (S6) and must be stored, transported and sold in accordance with the relevant Health Department regulations.

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

Exposure guidelines have not been established for this product by Safe Work Australia. However one of the ingredients has the following Safe Work Australia guideline:

Atmospheric Contaminant	Exposure Standard (TWA)	STEL (mg/m ³)
N-methyl pyrrolidone (Skin*)	1.03 mg/m ³ (25 ppm)	309 mg/m ³ (75 ppm)

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

* The 'skin' notation refers to the potential for dermal absorption of the material including mucous membranes and the eyes by contact with vapours or direct skin contact.

SECTION 8 | EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)**Biological Limit Values:**

No biological limit allocated.

Engineering controls:

Use in ventilated areas only. Use local exhaust at all process locations. Ventilate all transport vehicles prior to unloading. Keep containers closed when not in use.

Personal Protective equipment (PPE):

General: When opening the container, preparing spray wear and using the product wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat, elbow-length butyl rubber gloves and face shield or goggles. If product on skin, immediately wash area with soap and water. 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, face shield or goggles and contaminated clothing.

Respiratory Protection: Generally not required. Use of a respirator may be required in certain circumstances. If an inhalation risk exists, wear a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (Australian Standards).

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:	Light brown to dark brown liquid.
Boiling Point:	No data is available.
Solubility in Water:	Forms an emulsion in water.
Specific Gravity:	Approximately 1.1
Vapour Pressure:	No data is available.
Octanol/Water:	No data is available.
Partition Coefficient:	No data is available.
Flash Point:	Approximately 83°C.
Flammability:	Combustible liquid C1.
Formulation type:	Emulsifiable concentrate.

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: Do not store for prolonged periods in direct sunlight.

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

Hazardous decomposition products: Product will decompose when burnt and will emit toxic and noxious fumes.

Hazardous reactions: No special considerations. Will 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**

Ingestion: Low acute oral toxicity. The estimated Acute Oral LD₅₀ (rat) > 5000 mg/kg. If aspirated into the lung – for example from vomiting, the presence of the solvents may result in chemical pneumonitis or lung damage.

Skin: Prolonged contact with the concentrate defatting of the skin and may result in dermatitis.

SECTION 11 TOXICOLOGICAL INFORMATION (Continued)

Eye: The concentrate will cause severe irritation and possible damage unless washed off immediately.

Inhalation: High vapour concentrations of the solvent while handling the concentrate are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, and may have other central nervous system effects.

Long Term Exposure:

Clodinafop-propargyl technical has been extensively tested on laboratory mammals and in test-tube systems. No evidence of mutagenic, teratogenic or reproductive effects was obtained. **Clodinafop-propargyl technical** induced liver toxicity and benign and malignant liver tumours in mice fed high daily doses over their lifetime. Rats fed high doses showed mild liver toxicity but did not develop tumours while no liver effects were observed for dogs fed high doses. The liver tumour finding occurring at high doses is believed due to **clodinafop-propargyl** inducing proliferative effects genetically pre-existing in mice and has no relevance to humans because the cellular changes which underlie it are rodent-specific and have been shown experimentally not to occur in primates.

Cloquintocet-mexyl technical has been extensively tested and no evidence of mutagenic, carcinogenic, teratogenic, or reproductive effects was obtained.

The **aromatic hydrocarbon mixture** may cause central nervous system depression and narcosis.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Toxicology: No information is available for the product. The following information refers to the active ingredients. Clodinafop-propargyl technical is practically non-toxic to birds, crustaceans, earthworms, soil microorganisms and bees, and highly toxic to fish with LC_{50} (96 h) = 0.4 mg/L for rainbow trout. The formulated product is moderately toxic to fish and aquatic invertebrates LC_{50} (96 h) 4.9 mg/L for trout. DO NOT contaminate streams, rivers or water courses. Cloquintocet-mexyl technical is practically non-toxic to birds, fish, crustaceans, earthworms, soil microorganisms and bees.

Environmental Fate: Average half life of Clodinafop-propargyl in the field is 0.8 days. Average half life of Cloquintocet-mexyl in the field is 5 days.

SECTION 13 DISPOSAL CONSIDERATIONS

Spills & Disposal: Isolate and post spill area. Wear PVC or rubber apron, overalls, elbow-length PVC gloves and face shield. Large spills should be dyked or covered to prevent dispersal. Keep out animals and unprotected persons. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. 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 tank mix. Do not dispose of undiluted chemicals on-site. If not recycling, break, crush, or puncture and deliver empty packaging for appropriate disposal to an approved waste management facility. 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.

SECTION 14 TRANSPORT INFORMATION

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

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. (See special provision AU01). For bulk shipments this product is a class 9, UN 3082.

SECTION 14 | TRANSPORT INFORMATION (Continued)

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 24% Clodinafop-Propargyl). Hazchem code •3Z. Hazard Identification Number (HIN) 90.

SECTION 15 | REGULATORY INFORMATION

Classified as a hazardous substance according to criteria of the Safe Work Australia. (Xn - harmful, Xi - irritant).

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is a schedule 6 poison.

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 67810.

Product is not classified as a Dangerous Good according to the ADG Code (7th Ed).

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: 15 March 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.

Lacrimation: The production, secretion, and shedding of tears.

Lavage: A general term referring to cleaning or rinsing.

NOHSC: National Occupational Health and Safety Commission.

Pneumonitis: A general term that refers to inflammation of lung tissue.

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 Council website. (2013).
2. "Approved Criteria for Classifying Hazardous Substances" 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.
3. Standard for the Uniform Scheduling of Medicines and Poisons. No. 3. Medicines and Poisons Scheduling Secretariat. June 2012.

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