



SAFETY DATA SHEET
CLODINAFOP 45 g/l + FENOXAPROP 90 g/l EC

SDS # : FO002135-A
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Version 1

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name CLODINAFOP 45 g/l + FENOXAPROP 90 g/l EC

Product Code(s) FO002135-A

Recommended Use: Herbicide.

Restrictions on Use: Use as recommended by the label.

Manufacturer/Supplier FMC Australasia Pty Ltd
Building B' Level 2, 12 Julius Avenue,
NORTH RYDE, NSW 2113
Australia

Telephone: 1800 066 355 (Customer service 1800 901 939)
Telefax: 1800 355 896

Emergency telephone 1800 033 111 (Transport Emergency)
1800 033 111 (24 hr Emergency Medical Information)

Section 2: HAZARDS IDENTIFICATION

GHS Classification

Aspiration toxicity	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

Label Elements



Signal Word

Danger

Hazard Statements

H304 - May be fatal if swallowed and enters airways
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - Prevention

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P280 - Wear eye protection/ face protection

Precautionary Statements - Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P331 - Do NOT induce vomiting

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P321 - Specific treatment (see supplemental first aid instructions on label)

P363 - Wash contaminated clothing before reuse

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/ physician

P391 - Collect spillage

Precautionary Statements - Storage

P405 - Store locked up

Precautionary Statements - Disposal

P501 - Dispose of contents/container according to label directions

Other Information

None known

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Clodinafop propargyl	105512-06-9	4.3
FENOXAPROP-P-ETHYL	71283-80-2	8.7
Naphtha (petroleum), heavy aromatic	64742-94-5	45-55
4-Hydroxybutyric acid lactone	96-48-0	10-15
Alcohols, C9-11, ethoxylated	68439-46-3	10-15
CLOQUINTOCET-MEXYL	99607-70-2	1-5
Calcium dodecylbenzene sulfonate	26264-06-2	1-3
2-ETHYLHEXAN-1-OL	104-76-7	1-3

Section 4: FIRST AID MEASURES

Inhalation

Move to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Eye Contact

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Ingestion

Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. Call a poison control center or doctor immediately for treatment advice.

Most important symptoms and effects, both acute and delayed

Irritation and allergic reactions. In animal tests, non-specific signs of toxicity were seen after ingestion, such as difficulty breathing and sedation.

Protection of first-aiders

Use personal protective equipment. See Section 8 for more detail.

Indication of immediate medical attention and special treatment needed, if necessary

Immediate medical attention is required in case of ingestion or eye contact.

Notes to physician: A specific antidote for exposure to this material is not known. Gastric lavage and/or the administration of activated charcoal can be considered. After

decontamination, treatment should be directed at the control of symptoms and the clinical condition.

The product contains petroleum distillates which may pose an aspiration pneumonia hazard.

Section 5: FIRE FIGHTING MEASURES

Explosive properties	Not explosive.
Suitable Extinguishing Media	Water spray, dry chemical, carbon dioxide (CO ₂), or foam. Avoid heavy hose streams.
Unsuitable extinguishing media	No information available.
Specific Hazards Arising from the Chemical	The essential breakdown products are volatile, malodorous, toxic, irritant and inflammable compounds such as hydrogen chloride, hydrogen fluoride, nitrogen oxides, sulphur dioxide, carbon monoxide, carbon dioxide and various chlorinated and fluorinated organic compounds.
Protective equipment and precautions for firefighters HAZCHEM Emergency Action Code	Isolate fire area. Evaluate upwind. Dike to prevent runoff. As in any fire, wear self-contained breathing apparatus and full protective gear. 2Z

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Other	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
Methods for Containment	It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. Use non-sparking tools and equipment. If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with detergent and much water. Absorb wash liquid onto inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.
Methods for cleaning up	If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with strong industrial detergent and much water. Absorb wash liquid onto a suitable absorbent such as hydrated lime, universal binder, attapulgite, bentonite or other absorbent clays and transfer contaminated absorbent to suitable containers. The used containers should be properly closed and labelled.

Section 7: HANDLING AND STORAGE

Handling	In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. Otherwise it is recommended to handle the material by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8. Remove contaminated clothing and shoes. Wash thoroughly after handling. Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks. Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect
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all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

Storage

Protect against extremes of heat and cold. The product is stable under normal conditions of warehouse storage. Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

Materials to avoid

Strong oxidizing agents, Strong acids, Strong bases.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Limits**

To our knowledge, personal exposure limits have not been established for the active ingredients in this product.

Aromatic hydrocarbons: 100 ppm total hydrocarbon is recommended.

However, other personal exposure limits defined by local regulations may exist and must be observed.

Engineering measures

Apply technical measures to comply with the occupational exposure limits (if listed above). When working in confined spaces (tanks, containers, etc.), make sure there is an adequate source of air for breathing and wear the recommended equipment. Ventilate all transport vehicles prior to discharge.

Personal protective equipment**Respiratory Protection**

The product does not automatically present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers should put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Hand Protection

Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

Eye/Face Protection

When opening the container and preparing spray, wear goggles and a disposable fume face mask covering mouth and nose.

Skin and Body Protection

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

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Brown Liquid
Odor	Aromatic
Color	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling Point/Range	No information available
Flash point	Not determined, but expected to be > 95°C
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available

Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility(ies)	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	Not explosive
Oxidizing properties	Non-oxidizing
Relative density	No information available
Bulk density	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity	To our knowledge, the product has no special reactivities.
Stability	Stable under normal conditions.
Hazardous reactions	None known.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to Avoid	Heating can release hazardous gases.
Incompatible products	.

Hazardous Decomposition Products See Section 5 for more information.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information The product is practically non-toxic. The acute toxicity of the product is estimated as:.

Numerical measures of toxicity - Product Information

LD50 Oral	> 2000 - 3000 mg/kg (rat)
LD50 Dermal	> 2000 mg/kg (rat)
LC50 Inhalation	> 5 mg/L 4 hr (rat)

Skin corrosion/irritation	Mildly irritating.
Serious eye damage/eye irritation	.
Sensitization	Skin sensitizer.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Mutagenicity	The product contains no ingredients known to be mutagenic.
Carcinogenicity	There are no known carcinogenic chemicals in this product.
Reproductive toxicity	The product contains no ingredients known to have adverse effects on reproduction.
STOT - single exposure	No specific effects after single exposure have been observed.
STOT - repeated exposure	The following is found for the active ingredient fenoxaprop-P-ethyl: Target organs: liver and kidneys, increased organ weight NOAEL: 20 ppm (2 mg/kg bw/day) in a 90-day rat study. The following is found for the active ingredient clodinafop-propargyl: Serious liver damage was found in animal tests at exposure levels of 8 mg clodinafop-propargyl/kg bw/day (method OECD 408).
Symptoms	Irritation and allergic reactions. In animal tests, non-specific signs of toxicity were seen after ingestion, such as difficulty breathing and sedation.

Aspiration hazard This product presents an aspiration pneumonia hazard.

Chemical name	China	IARC
4-Hydroxybutyric acid lactone		Group 3

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

All data presented in this section is based on the active ingredient only. No product level data available.

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Clodinafop propargyl	Green algae (<i>Scenedesmus subspicatus</i>) 72-h IC ₅₀ 1.7 mg/l	Rainbow trout (<i>Oncorhynchus mykiss</i>) 96-h LC ₅₀ 0.39 mg/l 21-day NOEC 0.1 mg/l	Daphnids (<i>Daphnia magna</i>) 48-h EC ₅₀ > 74 mg/l 21-day NOEC: 0.23 mg/l
FENOXAPROP-P-ETHYL	Green algae (<i>Anabaena flos-aquae</i>) above solubility limit	Rainbow trout (<i>Oncorhynchus mykiss</i>) 96-h LC ₅₀ 0.31 mg/l 21-day NOEC 0.076 mg/l	Daphnids (<i>Daphnia magna</i>) 48-h EC ₅₀ >0.97 mg/l 21-day NOEC 0.16 mg/l

Birds: Clodinafop-propargyl: Bobwhite quail (*Colinus virginianus*) LD₅₀ 1455 mg/kg
Mallard duck (*Anas platyrhynchos*) LD₅₀ > 2000 mg/kg
Fenoxaprop-P-ethyl: Bobwhite quail (*Colinus virginianus*) LD₅₀ >2000 mg/kg
Mallard duck (*Anas platyrhynchos*) LD₅₀ > 2000 mg/kg

Bees: Clodinafop-propargyl: Honey bee (*Apis mellifera*) LD₅₀, contact > 100 µg/bee
LD₅₀, oral > 100 µg/bee
Fenoxaprop-P-ethyl: Honey bee (*Apis mellifera*) LD₅₀, contact > 100 µg/bee

Earthworms: Clodinafop-propargyl: *Eisenia foetida* 14-day LC₅₀ 210 mg/kg dry soil
Fenoxaprop-P-ethyl: *Eisenia foetida* 14-day LC₅₀ 24.8 mg/kg dry soil

Persistence and degradability Both clodinafop-propargyl and fenoxaprop-P-ethyl are biodegradable, but do not meet the criteria for being readily biodegradable. Degradation half-lives are found to be less than 1 day in aerobic soil for both compounds

Aromatic hydrocarbons are readily biodegradable as measured according to OECD guidelines. However, they are not always rapidly degraded in the environment, but are expected to be degraded at a moderate rate, depending on circumstances.

The product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Bioaccumulation Due to rapid degradation, both fenoxaprop-P-ethyl and clodinafop-propargyl do not bioaccumulate.

Aromatic hydrocarbons have a potential to bioaccumulate if continuous exposure is maintained. Most components can be metabolised by many organisms. Bioaccumulation factors (BCFs) of some of the main components are 1200 - 3200 by model calculation.

Mobility Fenoxaprop-P-ethyl and clodinafop-propargyl have low mobility in soil.

Aromatic hydrocarbons are not mobile in the environment, but are volatile and will evaporate to the air if released onto water or on the surface of soil. They float and can migrate to sediment.

Other Adverse Effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste disposal methods Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste. Dispose of as hazardous waste in compliance with local and national regulations. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated Packaging Triple or preferably pressure rinse containers before disposal. Add rinsings to the 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 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

IMDG/IMO

UN/ID no 3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (fenoxaprop-P-ethyl, clodinafop-propargyl and alkyl(C3-C6)benzenes)
Hazard class 9
Packing Group III
Special Provisions Do not release to the environment.
Marine Pollutant Yes

ICAO/IATA

UN/ID no 3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (fenoxaprop-P-ethyl, clodinafop-propargyl and alkyl(C3-C6)benzenes)
Hazard class 9
Packing Group III
Special Provisions Do not discharge to the environment.
Marine Pollutant Yes

ADG

Not classified as dangerous goods according to the ADG Code. Not dangerous goods under ADG code when being transported in IBCs or other receptacles < 500 kg (Special Provision AU01).

Special Transport Requirements

Matters needing attention for transportation:

Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 L or less for liquids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code and IATA special provision A197.

Section 15: REGULATORY INFORMATION

SUSMP: S6.

International Inventories

A food, food additive, drug, cosmetic, or device, when manufactured, processed or distributed in commerce for use as a food, food additive, drug, cosmetic, or device may not be subject to local notification requirements. Check local regulations for more information.

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
FENOXAPROP-P-ET HYL 71283-80-2						X		
Naphtha (petroleum), heavy aromatic 64742-94-5	X	X	X		X	X	X	X
4-Hydroxybutyric acid lactone 96-48-0	X	X	X	X	X	X	X	X
Alcohols, C9-11, ethoxylated 68439-46-3	X	X			X	X	X	X
CLOQUINTOCET-ME XYL 99607-70-2	X							

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Section 16: OTHER INFORMATION

Prepared By:

FMC Corporation

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Revision note

Initial Release.

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End of Safety Data Sheet