



SAFETY DATA SHEET

UNYUNOX™ 250 EC SELECTIVE HERBICIDE

Date of Issue: January 2020

1. IDENTIFICATION

Product Identifier: Unyunox™ 250 EC Selective Herbicide

Other Means of Identification: None

Recommended Use of the Chemical and Restrictions on Use: Selective Herbicide

Details of the Manufacturer or Importer: AgNova Technologies Pty Ltd
Suite 3/935 Station Street
Box Hill North Vic 3129 Australia
(03) 9899 8100
www.agnova.com.au

Emergency Phone Number: 1800 033 111 (24 hrs)
Poisons Information Centre 13 11 26

2. HAZARD(S) IDENTIFICATION

Signal word: Danger

GHS Hazard Class and Category: (as determined by Safe Work Australia)

Acute toxicity - Category 4

Hazard statement: H302 Harmful if swallowed.

Eye Damage/Irritation - Category 2A

Hazard statement: H319 Causes serious eye irritation.

Skin sensitization - Category 1

Hazard statement: H317 May cause an allergic skin reaction.

Carcinogenicity - Category 2

Hazard statement: H351 Suspected of causing cancer.

Reproductive toxicity - Category 2

Hazard statement: H361 Suspected of damaging fertility or the unborn child.

Aspiration hazard - Category 1

Hazard statement: H304 May be fatal if swallowed and enters airways.

Acute aquatic toxicity - Category 1

Hazard statement: H400 Very toxic to aquatic life.

Chronic aquatic toxicity - Category 1

Hazard statement: H410 Very toxic to aquatic life with long lasting effects.



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Precautionary Statements:

Prevention

- P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing mist and spray.
P264 Wash hands and face thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/ physician.
P330 Rinse mouth.
P331 Do NOT induce vomiting.
P302 + P352 IF ON SKIN: Wash with plenty of water/ soap.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
+ P338
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Storage

- P405 Store locked up.

Disposal

- P501 Dispose of contents/container in accordance with local regulation.

ADG Not classified as Dangerous Goods for Land Transport. Refer section 14

Classification:

SUSMP Classification: Poison Schedule 6
(Standard for Uniform Scheduling of Medicines and Poisons)

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Concentration (%):
loxynil octanoate	3861-47-0	31.30
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5	>= 55.00 - <= 65.00
Naphthalene	91-20-3	<= 6.50
2-Ethylhexan-1-ol	104-76-7	< 3.00
Other ingredients (non-hazardous) to 100%		

4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Safety Data Sheet to the doctor.

Description of Necessary First Aid Measures:

Inhalation: Move the victim to fresh air and keep at rest. If symptoms persist, call a physician. In case of respiratory arrest induce breathing with a respiratory device. Seek medical advice.



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Skin contact:	Take off contaminated clothing and shoes immediately. Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion:	Keep patient warm and at rest. Obtain medical attention. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.
First Aid Facilities:	Provide washing facilities in the workplace.
Symptoms Caused by Exposure:	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Inhalation of high vapour concentrations can cause CNS-depression and narcosis. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache). Aspiration may cause pulmonary oedema and pneumonitis. Symptoms of Overexposure, Tiredness, Thirst, Fever, Anxiety, Hyperventilation, Tachycardia, Muscle rigidity, Hypothermia, Pulmonary oedema.
Medical Attention and Special Treatment	Treat symptomatically. There is no specific antidote. In the event of a mouthful or more being ingested, the following measures should be considered: Monitor: respiratory, cardiac and central nervous system. In case of ingestion a gastric lavage within the first hour after ingestion and after intubation only with consecutive application of activated charcoal and sodium sulphate should be performed. In case of aspiration intubation and bronchial lavage should be considered. In case of hyperthermia physical cooling is advisable; in case of muscle rigidity muscle relaxants and mechanical ventilation may support in counteracting hyperthermia.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Equipment:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special Hazards Arising from the Chemical:	In the event of fire the following may be released:, Carbon dioxide (CO ₂), Carbon monoxide (CO), Nitrogen oxides (NO _x), Hydrogen iodide (HI)
Special Protective Equipment and Precautions for Firefighters:	Wear self-contained breathing apparatus and protective suit.
Further Information:	Whenever possible, contain fire-fighting water by diking area with sand or earth. Avoid contact with spilled product or contaminated surfaces. Evacuate personnel to safe areas. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Do not allow run-off from firefighting to enter drains or water courses.

Hazchem Code: •3Z



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6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke. Keep unauthorized people away. Ensure adequate ventilation. Remove all sources of ignition. Use personal protective equipment.
Environmental Precautions:	Contain contaminated water and firefighting water. Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and Materials for Containment and Cleaning Up:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Reference to Other Sections:	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

7. HANDLING AND STORAGE

Precautions for Safe Handling:	Use only in area provided with appropriate exhaust ventilation. Contact with eyes and skin must be avoided. Wash thoroughly with soap and water after handling. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash hands immediately after work, if necessary take a shower.
Conditions for Safe Storage, including any Incompatibilities	Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store for prolonged periods in direct sunlight. Store at room temperature. Protect from freezing. Keep away from food, drink and animal feeding stuffs.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters:

Components	CAS No.	Control parameters	Update	Basis
Ioxynil octanoate	3861-47-0	0.21 mg/m ³ (SK-SEN)		OES BCS*
Naphthalene	91-20-3	79 mg/m ³ /15 ppm (STEL)	12 2011	AU NOEL
Naphthalene	91-20-3	52 mg/m ³ /10 ppm (TWA)	12 2011	AU NOEL
Naphthalene	91-20-3	10 ppm (TLV)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"



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Engineering Controls: Use only in area provided with appropriate exhaust ventilation.

Individual Protection Measures, for example, Personal Protective Equipment (PPE):

Respiratory protection: Use respiratory protection for organic vapours.

Hand protection: Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination outside cannot be removed.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0.4 mm
Protective index	Class 6
Directive	Protective gloves complying with EN 374.

Eye protection: Face-shield

Skin and body protection: Wear standard coveralls and Category 3 Type 4 suit.

If there is a risk of significant exposure, consider a higher protective type suit.

Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

General protective measures: In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid, clear
Colour:	Yellow to brown
Odour:	Of aromatic hydrocarbons
Flash Point:	66°C
Density:	ca. 1.07 g/cm ³ at 20 °C
Partition Coefficient: n- octanol/water:	loxynil octanoate: log Pow: 6.0
Other Information:	Further safety related physical-chemical data are not known.

10. STABILITY AND REACTIVITY

Reactivity: Stable under normal conditions.



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Chemical Stability:	Stable under recommended storage conditions.
Possibility of Hazardous Reactions:	No hazardous reactions when stored and handled according to prescribed instructions. Stable under normal conditions.
Conditions to Avoid:	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible Materials:	Bases, Strong oxidizing agents, Strong reducing agents
Hazardous Decomposition Products:	Thermal decomposition can lead to release of: Nitrogen oxides (NO _x) Carbon oxides Iodine compounds

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	LD50 (Rat) 602 mg/kg
Acute Inhalation Toxicity:	LC50 (Rat) > 3 mg/l Exposure time: 6 h The value mentioned relates to the active ingredient ioxynil.
Acute Dermal Toxicity:	LD50 (Rat) > 2,000 mg/kg
Skin Corrosion/Irritation:	Slight irritation (Rabbit)
Serious Eye Damage/Irritation:	Irritating to eyes (Rabbit)
Respiratory or Skin Sensitisation:	Sensitising (Guinea pig)
Germ Cell Mutagenicity:	loxynil octanoate was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Carcinogenicity:

loxynil octanoate caused at high dose levels an increased incidence of tumours in the following organ(s): Thyroid, Liver. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

Naphthalene caused an increased incidence of tumours after chronic inhalation of high vapour concentrations in the following organ: Respiratory Tract. The tumours seen with naphthalene were caused through a non-genotoxic mechanism, which is not relevant at low doses.

Reproductive Toxicity:

loxynil octanoate was not a reproductive toxicant at non-maternally toxic dose levels in a two-generation study in rats. Ioxynil octanoate caused a reduced litter size and a reduced pup weight. The reproduction toxicity seen with Ioxynil octanoate is related to parental toxicity.

Developmental Toxicity:

loxynil octanoate caused developmental toxicity only at dose levels toxic to the dams. Ioxynil octanoate caused a delayed ossification of foetuses. The developmental effects seen with Ioxynil octanoate are related to maternal toxicity.

Specific Target Organ Toxicity (STOT) – single exposure:

loxynil octanoate: Based on available data, the classification criteria are not met.



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Specific Target Organ Toxicity (STOT) – repeated exposure:

Ioxynil octanoate caused specific target organ toxicity in experimental animal studies in the following organ(s): Blood, Liver. The observed effects do not appear to be relevant for humans.

Aspiration Hazard:

May be fatal if swallowed and enters airways.

Information on Possible Routes of Exposure:

Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. High concentration of vapours may cause irritation to eyes and respiratory system and produce narcotic effects. Inhalation of high vapour concentrations can cause CNS-depression and narcosis.

Prolonged skin contact may cause skin irritation and/or dermatitis. Skin sensitiser.

Causes eye irritation.

Harmful if swallowed. May lead to rapid onset of nausea, vomiting, diarrhea, excess salivation, pinpoint pupils, blurred vision, profuse sweating, temporary paralysis, respiratory depression, convulsions. Small amounts of the solvent in this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury.

Early Onset Symptoms Related to Exposure:

Refer to Section 4

Delayed Health Effects from Exposure:

Refer to Section 11

Exposure Levels and Health Effects:

Refer to Section 4

Interactive Effects:

Not known

When Specific Chemical Data is Not Available:

Not applicable

Mixture of Chemicals:

Refer to Section 2.1

Other Information:

No further toxicological information is available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Toxicity to Fish:

LC50 (*Lepomis macrochirus* (Bluegill sunfish)) 0.024 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient ioxynil-octanoate.

Toxicity to

Aquatic

Invertebrates:

EC50 (*Daphnia* (water flea)) 0.011 mg/l

Exposure time: 48 h

The value mentioned relates to the active ingredient ioxynil-octanoate.



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Toxicity to Aquatic Plants:	EC50 (<i>Navicula pelliculosa</i> (Freshwater diatom)) 0.24 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient ioxynil-octanoate.
Toxicity to Other Organisms:	LD50 (<i>Coturnix japonica</i> (Japanese quail)) 677 mg/kg The value mentioned relates to the active ingredient ioxynil-octanoate. LD50 (Pheasant) 1,000 mg/kg The value mentioned relates to the active ingredient ioxynil-octanoate. LD50 (<i>Anas platyrhynchos</i> (Mallard duck)) 1,200 mg/kg The value mentioned relates to the active ingredient ioxynil-octanoate.
Persistence and Degradability:	ioxynil octanoate: Not rapidly biodegradable ioxynil octanoate: Koc: 289
Bioaccumulative Potential:	ioxynil octanoate: Bioconcentration factor (BCF) 188 Does not bioaccumulate.
Mobility in Soil:	ioxynil octanoate: Moderately mobile in soils
Other Adverse Effects:	No other effects to be mentioned.

13. DISPOSAL CONSIDERATIONS

Triple-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 deliver empty packaging 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.

14. TRANSPORT INFORMATION

Transport Classification:

ADG	Road and Rail Transport: Not dangerous goods under the ADG7 when being transported in IBCs or other receptacles <500 L(kg), (Special Provision AU01).
UN number	3082
Transport hazard class(es)	9
Subsidiary Risk	None
Packaging group	III
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IOXYNIL OCTANOATE, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)
Hazchem Code	•3Z

Marine and Air Transport: Classified as Dangerous Goods for transport by sea and air according to the criteria of the UN Model Regulations for Transport of Dangerous Goods 13th edition.

IMDG

UN number **3082**



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Transport hazard class(es)	9
Subsidiary Risk	None
Packaging group	III
Marine pollutant	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IOXYNIL OCTANOATE, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)

IATA

UN number	3082
Transport hazard class(es)	9

Subsidiary Risk	None
Packaging group	III
Environm. Hazardous Mark	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IOXYNIL OCTANOATE, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)

15. REGULATORY INFORMATION

APVMA Registered according to the Agricultural and Veterinary Chemicals Act 1994
APVMA approval number: 87974

SUSMP Schedule 6

16. OTHER INFORMATION

Edition: Initial version

Revision Due: January 2025

Reason for Revision: Initial version

Abbreviations and Acronyms:	APVMA	Australian Pesticides and Veterinary Medicines Authority
	ADG	Australian Dangerous Goods
	AU NOEL	Australia. No observed effect level
	CAS	Chemical Abstracts Service
	ECx	Effective concentration to x %
	EN	European Standard
	GHS	Globally Harmonised System of Classification and Labelling of Chemicals
	IATA	International Air Transport Association
	IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
	IMDG	International Maritime Dangerous Goods
	LCx	Lethal concentration to x %
	LDx	Lethal dose to x %
	SK-SEN	Skin sensitiser
	STEL	STEL: Exposure standard - short term exposure limit (STEL): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average



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	is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.
SUSMP	Standard for Uniform Scheduling of Medicines and Poisons
TLV	Threshold Limit Value
TWA	TWA: Exposure standard - time-weighted average (TWA): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.

Data Sources: Manufacturer product safety data and published data

This SDS 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 SDS 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.

The opinions expressed herein are those of qualified experts with the manufacturer. Since the use of this information and of these opinions and the conditions of use of this product are not within the control of AgNova Technologies Pty Ltd, it is the user's obligation to determine the conditions of safe use of the product.

END OF SDS