SAFETY DATA SHEET

Nufarm Sentry Herbicide

Infosafe No.: 3NV0B
ISSUED Date : 20/05/2022
ISSUED by: NUFARM AUSTRALIA LIMITED.

Section 1 - Identification

Product Identifier
Nufarm Sentry Herbicide

Product Code
0512

Product Type
Group 2

Company Name
NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)

Address
103-105 Pipe Road Laverton North
Victoria 3026 AUSTRALIA

Telephone/Fax Number
Tel: +61 3 9282-1000
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Emergency Phone Number
1800 033 498 (24hr Australia)

Emergency Contact Name
www.nufarm.com.au

E-mail Address
SDSANZ@nufarm.com

Recommended use of the chemical and restrictions on use
For the pre-emergence control or suppression of certain annual grass and broadleaf weeds in imidazolinone herbicide tolerant barley, wheat (single gene)and canola; and for the early post-emergence control or suppression of certain annual grass and broadleaf weeds in imidazolinone herbicide tolerant canola and wheat (single gene) as specified in the Directions for Use section of the label.

Additional Information
This Safety Data Sheet describes the properties of the concentrated product.
The physical properties and the assessments may not apply to the properties of the product once it has been diluted for application.

Section 2 - Hazard(s) Identification

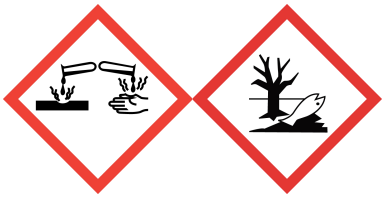
GHS classification of the substance/mixture
Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.
Complies with the requirements of Special Provision AU01 and therefore exempted from being classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)
Classified as Dangerous Goods according to International Maritime Dangerous Goods Code (IMDG) and International Air Transport Association (IATA).

Skin corrosion/irritation: Category 2
Eye damage/irritation: Category 1
Hazardous to the Aquatic Environment - Long-Term Hazard: Category 2

Signal Word (s)
DANGER

Hazard Statement (s)
H315 Causes skin irritation.
H318 Causes serious eye damage.
H411 Toxic to aquatic life with long lasting effects.

Pictogram (s)
Corrosion,Environment



Precautionary Statement–Prevention
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statement–Response
P302+P352 IF ON SKIN: Wash with plenty of water and soap.
P332+P313 If skin irritation occurs: Get medical advice/attention.
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/doctor.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Precautionary Statement–Disposal
P501 Dispose of contents/container to to an approved waste disposal plant.

Section 3 - Composition and Information on Ingredients

Ingredients

Name	CAS	Proportion
Imazapic	104098-48-8	50-60 %
Talc	14807-96-6	10-30 %
imazapyr (ISO)	81334-34-1	10-20 %
Anionic surfactant		0-10 %

Section 4 - First Aid Measures

Inhalation
If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

Ingestion
Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

Skin
Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.

Eye
If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical attention.

First Aid Facilities
Eyewash, safety shower and normal washroom facilities.

Advice to Doctor
Treat symptomatically.

Other Information
For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

Section 5 - Firefighting Measures

Suitable Extinguishing Media
Water fog, foam, carbon dioxide or dry chemical.

Unsuitable Extinguishing Media
Avoid strong water jets - airborne dusts may form a flammable dust cloud.

Hazards from Combustion Products
Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases, including carbon monoxide, carbon dioxide, oxides of nitrogen.

Specific hazards arising from the chemical
This product will burn if exposed to fire.

Decomposition Temperature
Not available

Precautions in connection with Fire
Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

Section 6 - Accidental Release Measures

Emergency Procedures
Remove all sources of ignition. Increase ventilation. Evacuate all unprotected personnel. Do not breathe dust. Wear respiratory protection and full protective clothing to minimise exposure. Sweep up material avoiding dust generation - dampen spilled material with water if suitable to avoid airborne dust, OR where possible use dustless methods such as vacuum to collect the material; then transfer material in to suitable vapour tight labelled containers for subsequent recycling or disposal. Dispose of waste according to applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.
This product is a herbicide and spills can damage crops, pastures and desirable vegetation.

Section 7 - Handling and Storage

Precautions for Safe Handling
Avoid inhalation of dust, and skin or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of dust in the work atmosphere. Establish good housekeeping practices. Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds. Maintain high standards of personal hygiene i.e. washing hands prior to eating, drinking, smoking or using toilet facilities.
Do not mix, store or apply the product or spray solutions of the product in aluminium, galvanised steel or unlined steel containers or spray tanks.

Conditions for safe storage, including any incompatibilities
StorStore in a well ventilated area away from heat and sources of ignition, out of direct sunlight and moisture. Take precautions against static electricity discharges. Use proper grounding procedures. Store away from incompatible materials such as materials that support combustion (oxidising materials). Store in suitable, labelled containers. Inspect periodically for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Ensure that storage conditions comply with applicable local and national regulations. For information on the handling of Combustible dusts and grounding procedure reference should be made to Australian Standard AS/NZS 4745 - 'Code of Practice for Handling Combustible Dusts'

Section 8 - Exposure Controls and Personal Protection

Occupational exposure limit values
No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed

Talc:

TWA: 2.5 mg/m³
NOTE: Sk; Sen

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

Source: Safe Work Australia

Biological Monitoring
No biological limits allocated.

Control Banding
Not available

Engineering Controls
This substance is hazardous and should be used with a local exhaust ventilation system, drawing solid/dust away from workers' breathing zone. A flameproof exhaust ventilation system is required. If the engineering controls are not sufficient to maintain concentrations of particulates below the exposure standards, suitable respiratory protection must be worn.

Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable dust/particulate filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye and Face Protection
Safety glasses with full face shield should be used. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 (series) - Eye Protectors for Industrial Applications.

Hand Protection
Wear gloves of impervious material such as elbow-length PVC gloves. Final choice of appropriate gloves will vary according to individual circumstances. i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.
Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Thermal Hazards
No further relevant information available.

Body Protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist and a washable hat is recommended. Chemical resistant apron is recommended where large quantities are handled.

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

Properties	Description	Properties	Description
Form	Solid	**Appearance**	Brown granules
Colour	Brown	**Odour**	No odour
Melting Point	Not available	**Boiling Point**	Not available
Decomposition Temperature	Not available	**Solubility in Water**	Disperses in water.
Specific Gravity	Not available	**pH**	Not available
Vapour Pressure	<0.01 mPa (imazapic); <0.013 (imazapyr)	**Relative Vapour Density (Air=1)**	Not available
Evaporation Rate	Not available	**Odour Threshold**	Not available
Viscosity	Not available	**Partition Coefficient: n-octanol/water (log value)**	Kow Log P : 0.393 (imazapic); 0.11 (imazapyr)
Flash Point	>173°C (TOC)	**Flammability**	Combustible
Auto-Ignition Temperature	Not available	**Explosion Limit - Upper**	Not available
Explosion Limit - Lower	Not available	**Particle Size**	Not available

Other Information
pKa: 2, 3.6, 11 (imazapic, imazapyr)
Bulk density: 590 kg/m^3

Section 10 - Stability and Reactivity

Reactivity
Reacts with incompatible materials.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Keep away from strong oxidising agents.

Conditions to Avoid
Dust accumulation, heat and other sources of ignition.

Incompatible Materials
Do not mix, store or apply the product or spray solutions of the product in galvanised steel or unlined steel (except stainless steel) containers or spray tanks. Not compatible with aluminium.

Hazardous Decomposition Products
Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide and oxides of nitrogen.

Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Toxicology Information
Toxicity data is given below.

Acute Toxicity - Oral
Imazapic:
LD50 (rat): >5000 mg/kg

Imazapyr:

LD50 (rat): >5000 mg/kg

Acute Toxicity - Dermal
Imazapic:
LD50 (rat): >2000 mg/kg

Imazapyr:
LD50 (rat): >2000 mg/kg

Acute Toxicity - Inhalation
Imazapic:
LC50 (rat): >4.38 mg/l/4h

Imazapyr:
LC50 (rat): >5.1 mg/kg/4h

Ingestion
Ingestion of this product may irritate the gastric tract causing nausea and vomiting.

Inhalation
Inhalation of dusts may irritate the respiratory system.

Skin
Causes skin irritation. Skin contact will cause redness, itching and swelling. Repeated exposure may cause skin dryness and cracking and may lead to dermatitis.

Eye
Causes eye damage. Eye contact will cause stinging, blurring, tearing, severe pain and possible burns, necrosis, permanent damage and blindness.

Respiratory Sensitisation
Not expected to be a respiratory sensitiser.

Skin Sensitisation
Not expected to be a skin sensitiser.

Germ Cell Mutagenicity
Not considered to be a mutegenic hazard.

Carcinogenicity
Not considered to be a carcinogenic hazard.
Talc is listed as a Group 3: Not classifiable as to carcinogenicity to humans according to International Agency for Research on Cancer (IARC).

Reproductive Toxicity
Not considered to be toxic to reproduction.

STOT - Single Exposure
Not expected to cause toxicity to a specific target organ.

STOT - Repeated Exposure
Not expected to cause toxicity to a specific target organ.

Aspiration Hazard
Not expected to be an aspiration hazard.

Other Information
The Australian Acceptable Daily Intake (ADI) for imazapic for a human is 0.3 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 137 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. ADI for imazapyr is 2.5 mg/kg/day, NOEL 250 mg/kg/day.
Ref: Australian Pesticides and Veterinary Medicines Authority (APVMA) March 2022.

Section 12 - Ecological Information

Ecotoxicity
Toxic to aquatic life with long lasting effects.

Persistence and degradability
Loss from soil is principally by microbial degradation. Not readily biodegradable. Refer to minimum re-cropping interval tables on the label for more information.

Mobility
Not available

Bioaccumulative Potential
Not available

Other Adverse Effects
Not available

Environmental Protection
Do not discharge this material into waterways, drains and sewers. Spray drift can cause damage, read the label for more information.

Acute Toxicity - Fish
For similar product:
LC50 (Brachydanio rerio): >100 mg/l/96h

Acute Toxicity - Daphnia
For similar product:
LC50 (daphnia): 127 mg/l/48h

Acute Toxicity - Algae
For similar product:
EC50 (Selenastrum capricornutum): 3.38 mg/l/96h

Acute Toxicity - Other Organisms
Malathion:
Birds: Not toxic to birds. LD50 (mallard duck and bobwhite quail): >2150 mg/kg
Bees: Not toxic to bees. LD50: >100 µg/bee.

Hazardous to the Ozone Layer
This product is not expected to deplete the ozone layer.

Section 13 - Disposal Considerations

Disposal Considerations
Dispose of waste according to applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations. To minimise personal exposure to the chemical, refer to Section 8—Exposure controls and personal protection.
Product Disposal
On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).
Container Disposal
Do not use this container for any other purpose. Triple or preferably pressure rinse containers before disposal. Add
rinsings to the spray tank. 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 at an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500mm 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. Empty containers and product should not be burnt.

Section 14 - Transport Information

Transport Information
Road and Rail Transport (ADG Code):
This product complies with the requirements of Special Provision AU01 and is therefore exempted from being classified as Dangerous Goods according to the ADG Code.
Note: Special Provision AU01:
Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in: packagings that do not incorporate a receptacle exceeding 500 kg(L); or IBCs.

Marine Transport (IMO/IMDG):
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

Class/Division: 9
UN No: 3077
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains Imazapic)
Packing Group: III
EMS: F-A, S-F
Special Provisions: 274, 335, 966, 967, 969

Air Transport (ICAO/IATA):
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.
Class/Division: 9
UN No: 3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.(Contains Imazapic)
Packing Group: III
Label: Miscellaneous
Packaging Instructions (passenger & cargo): 956
Packaging Instructions (cargo only): 956
Special provisions: A97, A158, A179, A197, A215

UN Number
None Allocated

Proper Shipping Name
None Allocated

Transport Hazard Class
None Allocated

Special Precautions for User
Not available

IMDG Marine pollutant
Yes

Transport in Bulk
Not available

Section 15 - Regulatory Information

Regulatory Information
Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.
Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule
S5

Montreal Protocol
Not listed

Stockholm Convention
Not listed

Rotterdam Convention
Not listed

International Convention for the Prevention of Pollution from Ships (MARPOL)
Not available

Agricultural and Veterinary Chemicals Act 1994
Not available

Basel Convention
Not available

Other Information
This product is registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA). APVMA product number: 67951.

Section 16 - Any Other Relevant Information

Date of Preparation
SDS created: May 2022
Name and product type updated August 2022

Version Number
1.1

Literature References
Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
Standard for the Uniform Scheduling of Medicines and Poisons.
Australian Code for the Transport of Dangerous Goods by Road & Rail.
Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Code of Practice for Supply Diversion into Illicit Drug Manufacture.
National Code of Practice for Chemicals of Security Concern.
Agricultural Compounds and Veterinary Chemicals Act.
International Agency for Research on Cancer (IARC) Monographs.
Montreal Protocol on Substances that Deplete the Ozone Layer.
Stockholm Convention on Persistent Organic Pollutants (POPs).
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.
International Air Transport Association (IATA) Dangerous Goods Regulations.
International Maritime Dangerous Goods (IMDG) Code.
Workplace exposure standards for airborne contaminants.
Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).
Globally Harmonised System of Classification and Labelling of Chemicals (7th revised edition).
Code of Practice: Managing Noise and Preventing Hearing Loss at Work.
Australian Pesticides and Veterinary Medicines Authority (APVMA) March 2022

Contact Person/Point
Normal hours: SDS coordinator : Phone +61 3 9282 1000
After hours: Shift supervisor : Phone 1800 033 498

END OF SDS

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