



Material Safety Data Sheet

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Infosafe No. NU02U Issue Date : June 2005 ISSUED by NUFARM

Product Name : **MOLINATE 960 Herbicide**

Classified as hazardous according to criteria of NOHSC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name MOLINATE 960 Herbicide
Product Code 0638
Product Use Post-emergence herbicide for the control of grass weeds in rice.
Company Name NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)
Address 103-105 Pipe Road Laverton North
Victoria 3026 Australia
Emergency Tel. 24hr 1800 033 498
Telephone Number/Fax Tel: (03) 9282-1000 Fax: (03) 9282-1001
Product Type Group E Herbicide
Other Information This MSDS describes, to the best of our knowledge, the properties of the concentrated product. The physical properties and some of the assessments do not apply to the properties of the product once it has been diluted for application. Acute health effects of the diluted product are likely to be much less severe.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization Liquid

Ingredients	Name	CAS	Proportion
	Molinat	2212-67-1	960 g/L
	Proprietary emulsifiers mixture		60 g/L
	Petroleum extract bp:183 - 280C		20 g/L

Substance Chemical Family Thiocarbamate

3. HAZARDS IDENTIFICATION

Harmful if swallowed.
Irritating to eyes.

Other Information Poisons Schedule 7 DANGEROUS POISON

4. FIRST AID MEASURES

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

Ingestion Rinse mouth thoroughly with water.
Give a glass of water.
If swallowed do NOT induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre on 13 11 26 (Aust). Make every effort to prevent vomit from entering the lungs by careful placement of the patient.
The above first aid instructions are mandated by the Commonwealth Department of Health and Aged Care via the National Drugs and Poisons Schedule. These instructions are suitable for ingestion of spray solution and small amounts of concentrate; however, if SUBSTANTIAL AMOUNTS of the concentrate have been swallowed (more than about 30ml) AND if medical assistance is more than 30 minutes away, the induction of vomiting should be CONSIDERED, preferably based on MEDICAL ADVICE if a physician can be contacted by phone. All care must be taken to prevent vomit from being inhaled. Do not give anything by mouth to a semi-conscious or unconscious person.

Skin If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water.
Wash affected areas thoroughly with soap and water.
If irritation persists, seek medical advice.

Eye If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.
Seek medical advice.

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First Aid Facilities If poisoning occurs, contact a doctor or Poisons Information Centre on 13 11 26 (Australia).

Advice to Doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media Avoid using large volumes of water which would spread the product. Water fog, foam, carbon dioxide or dry chemical.

Hazardous Although material is not flammable, the concentrate is combustible.

Combustion Products If involved in a major fire, could evolve oxides of nitrogen or sulphur.

Protective Equipment Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect spilled material and waste in sealable open-top type containers for disposal. On-site disposal of concentrate is not acceptable. Dispose of at a landfill in accordance with local regulations.

Environmental Precautions This product is a herbicide and spills can damage crops, pastures and desirable vegetation. Prevent from entering drains, waterways or sewers.

Clean-up Methods - Large Spillages Place damaged containers in recovery bins (if available) and return to manufacturer.

7. HANDLING AND STORAGE

Handling Do NOT spray in high winds.

Storage Store in the closed, original container in a dry, cool well ventilated area out of direct sunlight. Do not store near oxidisers.

Other Information Always read the label and any attached leaflet before use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No biological exposure limit allocated. No exposure standard has been established for this product.

Respiratory Protection Do not inhale spray mist.

Eye Protection Wear chemical goggles.

Personal Protective Equipment When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and goggles.

Eng. Controls Handle in well ventilated areas, generally natural ventilation is adequate.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Brown liquid.

Odour Pungent organic sulphur odour.

Melting Point <0°C

Boiling Point >150°C

Solubility in Water Disperses in water. Not soluble.

Specific Gravity (H2O=1) 1.06

Vapour Pressure Molinate 5.6*10⁻³ mmHg @ 25°C

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Volatile Component <4%
Flash Point 66°C (CC)
Flammability Combustible liquid C1.
Ignition Temperature Not known
Flammable Limits Not known
LEL

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.
Hazardous Polymerization Hazardous polymerisation is not possible.
Hazardous Reaction Keep away from strong oxidising agents.

11. TOXICOLOGICAL INFORMATION

Toxicology Information No harmful effects are expected if the precautions on the label and this MSDS are followed.

Inhalation When applying the product as a spray avoid breathing in spray mists. May cause irritation to mucous membranes. Breathing vapour can result in headaches, dizziness and possible nausea.

Ingestion The concentrate is harmful if swallowed. Amounts swallowed incidental to normal handling procedures and use are not expected to cause injury. Molinate is rapidly metabolised and excreted, mainly in the urine.

Skin May irritate the skin. Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis.

Eye The concentrate will cause irritation of the eyes.

Chronic Effects Evidence from animal studies indicate that repeated or prolonged exposure to molinate can result in neuropathy.

Reproductive Toxicity Evidence from animal studies suggests the potential for developmental toxicity on repeated or prolonged exposure.

Carcinogenicity Molinate has been classified in the occupational environment as a Carcinogen Category 3 substance. This means that the substance is not classifiable as to carcinogenicity to humans.

Acute Toxicity - Oral LD50 (rat) 730 mg/kg for molinate

Acute Toxicity - Dermal LD50 (rabbit) >2000 mg/kg for molinate

Acute Toxicity - Inhalation LC50 (rat) (4hr) 2.9 mg/l for molinate

Eye Irritation The product is an eye irritant.

Skin Irritation Mild skin irritant.

Other Information The Australian Acceptable Daily Intake (ADI) for molinate for a human is 0.002 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.2 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, 'ADI List', TGA, December 2004).

Other Toxicological information:
 Laboratory testing in animals has shown that exposure to molinate, followed by the ingestion of alcohol causes adverse effects, including a reduction in blood pressure, rapid heart beat and flushing of the skin. Consumption of alcohol during and after using this product should be avoided.

12. ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment Molinate products do not appear to pose any threat to fish or other aquatic organisms other than in very high concentrations.

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Other Precautions Do not spray on vegetation where honeybees are foraging.
Do not spray in high winds.
Do not contaminate dams, waterways or sewers with this product.

Environ. Protection Spray drift can cause damage, read the label for more information.

Persistence / Degradability Average field half life of molinate is 8 - 25 days.

Acute Toxicity - Fish Not toxic to fish.
The following is data for the active ingredient, molinate.
LC50 (96 hr) for rainbow trout is 13 mg/l.
LC50 (96 hr) for bluegill sunfish is 29 mg/l.

13. DISPOSAL CONSIDERATIONS

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 (ChemCollect).

Container Disposal Do not use this container for any other purpose.
Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations.
drumMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers. If the label on your container carries the drumMuster symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program.
If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.
Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION

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

U.N. Number None Allocated

Proper Shipping Name None Allocated

DG Class None Allocated

Hazchem Code None Allocated

Packing Group None Allocated

Storage and Transport Considered non dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.

15. REGULATORY INFORMATION

Risk Phrase R22 Harmful if swallowed.
R36 Irritating to eyes.

Safety Phrase 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.

Poisons Schedule S7

Packaging & Labelling DANGEROUS POISON
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Hazard Category Harmful, Irritant

AICS (Australia) All of the components in this product are listed on the Australian Inventory of Chemical Substances.

16. OTHER INFORMATION

Contact Person/Point Normal Hours: Mr Volker Maier Phone: (03) 9282 1000
After Hours: Shift Supervisor Phone: 1800 033 498



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References

1. National Drugs and Poisons Schedule Committee, Record of Reasons, June 2004;
2. European Union Directive 67/548/EEC Annex 1 (29th ATP).

Revisions Highlighted

The MSDS was reviewed. Minor changes were made to the information.
Product is now a Schedule 7 - Dangerous Poison
...End Of MSDS...