

SAFETY PRECAUTIONS

1. Handle with care. Avoid contact/splashing.
2. Wear protective clothing - wear rubber gloves and face shield when handling the concentrate.
3. KEEP OUT OF THE REACH OF CHILDREN.
4. KEEP AWAY FROM FOOD AND FOODSTUFFS.
5. KEEP UNDER LOCK AND KEY.
6. DO NOT eat, drink or smoke whilst handling this product.
7. Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10% of that container. Add the rinsings to the contents of the spray tank before destroying the container.
8. While spraying, avoid contact with the spray as much as you can since product may cause eye and skin irritation. Avoid spray drift onto other crops, grazing, rivers or dams.
9. Clean applicator thoroughly after use and dispose of wash water where it will not contaminate crops, grazing, rivers or dams. Toxic to fish and harmful to other aquatic life.
10. Destroy empty container and do not use for any other purpose.
11. Change and wash your work clothes after use. Wash yourself.

SYMPTOMS OF POISONING

Symptoms similar to those caused by nicotine poisoning. Apathetic state, depressed muscular tone, respiratory disturbances and trembling; muscular cramps also possible in severe cases of poisoning.

FIRST AID

1. If any of the above symptoms occur, particularly if contamination is likely, STOP WORK.
2. Remove contaminated clothing and wash skin and hair thoroughly.
3. If swallowed, induce vomiting without delay by tickling the back of the throat.
4. CALL A DOCTOR AND SHOW HIM THIS LABEL.

NOTE TO PHYSICIAN

No specific antidote. Treat symptomatically.

WARNINGS

1. Allow 32 days between last application and harvest of maize.
2. On tobacco, IMIDACLOPRID 200SL should only be used at planting and should not be applied over the crown of the seedling.

WARRANTY

Provided that the recommendations for usage of this product are strictly followed it should give excellent results, but since the performance of crop protection chemicals and pesticides can be influenced by factors outside the manufacturer's control, the manufacturers and seller give no guarantee or warranty, either express or implied, concerning the use and/or storage of this product, and accept no responsibility or liability of any nature whatsoever for any damage, injury or financial loss of any nature from the use thereof.

Manufactured by:

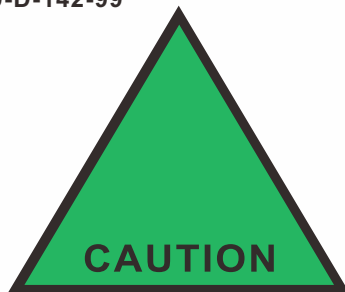
NOVAAGRO (HK) LTD
6TH FLOOR, WYNDHAM PLACE,
44 WYNDHAM STREET,
CENTRAL HONG KONG

IMIDACLOPRID 200SL

Insecticide/Termiteicide

Reg. No.: 19-D-142-99

1L



HARMFUL IF SWALLOWED

Composition mass/vol.

Imidacloprid.....200g/L

Inert ingredients.....to 1 litre

Chemical group: neonicotinoid

INSECTICIDE/TERMITICIDE FOR AGRICULTURAL USE

A systemic insecticide for the control of aphids and termites in tobacco as well as termites in maize and cotton.

TO CAUSE A HAZARD IN THE USE, STORAGE OR DISPOSAL OF THIS SUBSTANCE IS AN OFFENCE.

KEEP OUT OF REACH OF CHILDREN



1. Triple rinse clean container after use
2. Punctures holes in bottom
3. Return to Maguires Recycling Facilitator / Return to nearest recycling facility

DIRECTIONS FOR USE - Use only as directed.

Pour the required quantity of IMIDACLOPRID 200SL into the water while agitating thoroughly. Do not allow the IMIDACLOPRID 200SL mixture to stand any length of time before using.

APPLICATION RATES

CROP	PEST	DOSAGE RATE/100L	REMARKS
Tobacco lands TRB No. 16-19-D-48 (Always consult TRB Handbook for detailed recommendations)	Aphids	1,0L/ha at planting	Apply at an overall rate of 1,0L/ha at planting using one of the following methods: Mix directly in bulk planting water supply: Pour 1L of mix into each planting hole. Mix separately from planting water: Apply one 30ml cup of mix in each planting hole immediately after filling it prior to planting.
	Termites	6,5ml/100L water 220ml/100L water	
Maize	Termites	200ml (0,5L/ha)	Apply 8 - 10 weeks after planting (prior to termite attack). Apply, using a knapsack, as a 30cm band in the maize row with at least 250L water/ha.
Cotton	Termites	1,0L/ha	Furrow treatment: Apply over seed in the furrow before covering with soil. Use a knapsack applying at least 100L spray mixture/ha.

COMPATIBILITY

IMIDACLOPRID 200SL is compatible with most conventional insecticides.

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Empty container disposal

Invert the empty container over the spray tank or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10% of the container. Add the rinsings to the contents of the spray tank. Destroy the empty container by perforation and flattening. Return to supplier for recycling. DO NOT use for any other purpose. Dispose of the wash water at a site for the disposal of pesticides.

Decontamination of sprayer

Clean applicator thoroughly after use and ensure that all traces of IMIDACLOPRID 200SL are removed. Make use of the following method:

- (a) Drain and rinse tank, spray boom and hoses with clean water for at least 10 minutes
- (b) Fill tank with clean water and add it to 1 litre household bleach (5%) or 1.5 Litres of household bleach (3.5%) per 200 Litres of water. Rinse hoses and spray boom and leave in tank for 15 minutes whilst agitating. Drain through nozzle outlets.
- (c) Repeat step (b) and thereafter, rinse thoroughly with clean water and dispose of the wash water at a site designated for the disposal of pesticides.

Date of Manufacture:

Batch No.:

Registration held by:

MAGCHEM (PVT) LIMITED
2274 TILBURY ROAD,
WORKINGTON, HARARE,
ZIMBABWE

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SUPPLIER: NOVA AGRO (HK) LTD
28/F Tesbury Centre
28 Queen's Road East
Wanchai
HONG KONG

Emergency telephone numbers:

Spillages:

Telephone No. 00263 4 704173

Poisonings:

National Poison Centre (+27) 021-9386084
(office hours.
(+27) 021-9316129
(after hours)

UFS Pharmacology/Toxicology information centre: (+27) 082 4910160

EEC classification: Xn, Harmful.
R Phases: R22, R43

3. HAZARD IDENTIFICATION

Toxicity class: WHO II; EPA II
ADI 0.057mg/kg
NOEL 100mg/kg (male rats) and
300mg/kg (female rats) - 2
year; mice 330mg/kg;
500mg/kg diet (dogs) - 1
year.

Main Hazard:

Harmful if swallowed.

Fire and explosion hazard:

Product is considered non-flammable.

Chemical Hazard:

None known.

Biological Hazard:

Likely routes of exposure: Ingestion.

Ingestion:

Harmful if swallowed.

Inhalation:

Relatively non-toxic by inhalation.

Skin contact:

Relatively non-toxic by skin contact. Non-irritating to skin.

Eye contact:

Non-irritating to eyes

Carcinogenicity:

Considered to be of minimal carcinogenic risk.

Mutagenicity:

May be weakly mutagenic.

1. IDENTIFICATION OF THE SUBSTANCE

Trade Name: IMIDACLOPRID 200SL

Active ingredient: Imidacloprid

Chemical Name: 1-(6-chloro-3-pyridyl-methyl)-N-nitroimidazolidin-2-ylideneamine (IUPAC)

CAS No. [13826-41-3]

Chemical Family: Chloro-nicotinyl

Chemical Formula: C₉H₁₀ClN₅O₂ (Mol. wt.: 255.7)

Use: A systemic insecticide for the control of aphids and red scale on citrus trees, as well as termites in maize and tobacco lands.

UN No. 2902

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components: Imidacloprid 200g/l

4. FIRST AID MEASURES AND PRECAUTIONS

Symptoms of exposure to the product might include: fatigue, twitching, cramps and muscle weakness.

Remove victim from the danger zone. Take off immediately all contaminated clothing. After

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skin contact, wash immediately with plenty of water and soap.

In case of ingestion, **Seek medical advice immediately.**

Note to physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing agents:

Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for fire-fighting for later disposal.

Avoid the accumulation of polluted run-off from the site.

Fire-fighting:

Remove spectators from surrounding area.

Remove container from fire area if possible.

Fight fire from maximum distance.

For massive fire, use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Water can be used to cool unaffected containers but must be contained for later disposal. Avoid inhaling hazardous vapours.

Keep upwind.

Personal protective equipment:

Fire-fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions:

Do not inhale fumes. Ventilate area of spill or leak, especially confined areas. Avoid contact with skin, eyes or clothes. For personal protection see Section 8.

Environmental precautions:

Do not allow entering drains or watercourses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations.

Occupational spill:

For **small spills**, dampen solid spill material with water and transfer the dampened material to a suitable container. Seal contaminated clothing and the absorbent paper in a vapour-tight plastic bag for eventual disposal. Wash all contaminated surfaces with soap and water. Thoroughly wash body areas, which come into contact with the product. Do not allow the product to come in contact with water systems. For **large spills** contact the manufacturer. Contain spillage and contaminated water for subsequent disposal. Do not flush spilled material into drains.

Keep spectators away and upwind.

7. HANDLING AND STORAGE REQUIREMENTS

Handling:

Harmful if swallowed. Avoid contact with eyes and skin and inhalation of the product. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to inter-tidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination

Storage:

Store in its original container in isolated, dry, cool (avoid temperatures above 40°C) and well-ventilated area. Avoid cross contamination with other pesticides and fertilizers. Keep under lock

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and key out of reach of unauthorized persons, children and animals. Store away from incompatible substances. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Occupational exposure limits:

No occupational limits established by OSHA, ACGIH or NIOSH

Engineering control measures:

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Only spark-resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

Respirator:

An approved full-face respirator suitable for protection against the pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

Gloves:

Employee must wear appropriate chemical resistant protective gloves to prevent contact with this substance.

Eye protection:

Employee must wear splash-proof safety goggles and face-shield to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

A clear liquid with a slight characteristic smell.

Flammability:

Non-flammable

Explosive properties:

Non-explosive.

Flash point:

Not applicable.

Corrosivity

Non-corrosive.

pH:

8.0 – 10.0 at 10% in water

Storage stability:

Stable for up to 2 years under normal warehouse and field conditions.

Solubility in water:

The product is of very low solubility in water.
0.16g /ℓ at 20°C (*Active Ingredient*)

Solubility in organic solvents:

(*All solubility figures for active ingredient at 20°C*)

dichloromethane	55g/ℓ
isopropanol	1.2g/ℓ
toluene	0.68g/l

Partition-coefficient in n-octanol / water:

K_{ow} (logP) = 0.57 (*data for a.i.*) (22°C).

Melting point:

144°C

10. STABILITY AND REACTIVITY

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Stability:

The product is stable at room temperature.

Incompatibility:

Do not mix with any other chemical when applied as a trunk application.

Hazardous decomposition:

Product is considered non-flammable, but it is probably combustible. In the event of fire, the formation of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides must be anticipated.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:

c. 1100mg/kg body weight in rats.

Acute dermal LD₅₀:

>5000 mg/kg in rats.

Acute inhalation LC₅₀ (4 h):

>5323mg/m³ dust in rats.

Acute skin irritation:

Not irritating to skin.

Acute eye irritation:

Non-irritating to eyes.

Dermal sensitisation:

Non-sensitizing to skin (guinea pigs).

Carcinogenicity:

Considered to be of minimal risk.

Teratogenicity / Reproductive hazard:

Found to be non-teratogenic.

Mutagenicity:

May be weakly mutagenic.

12. ECOLOGICAL INFORMATION

Degradability: (Technical material)

The half-life of imidacloprid in soil is 48-190 days, depending on the amount of ground cover (it breaks down faster in soils with plant ground cover than in fallow soils). Organic material aging may also affect the breakdown rate of imidacloprid. Plots treated with cow manure and allowed to age before sowing showed longer

persistence of imidacloprid in soils than in plots where the manure was more recently applied, and not allowed to age. Imidacloprid is degraded stepwise to the primary metabolite 6-chloronicotinic acid, which eventually breaks down into carbon dioxide.

Mobility:

There is generally not a high risk of groundwater contamination with imidacloprid if used as directed. The chemical is moderately soluble, and has moderate binding affinity to organic materials in soils. However, there is a potential for the compound to move through sensitive soil types including porous, gravelly, or cobbly soils, depending on irrigation practices.

Accumulation: Will not bio-accumulate.

ECOTOXICOLOGY:

Birds: Moderately toxic to birds.

Oral LD₅₀ (bobwhite quail): 152mg/kg; Japanese quail: 31mg/kg. Risk of dietary exposure to birds via treated seed is minimal.

Fish(LC₅₀- 96h): Moderate to low toxicity to fish.

Rainbow trout: 211mg/litre

Golden orfe: 237mg/litre

Daphnia(LC₅₀-48h): 85mg/litre

Bees: Although harmful to bees by direct contact, not considered a hazard to bees when used as a seed treatment.

Earthworms: Low toxicity to earthworms

Soil micro-organisms: No information currently available.

Algae(E_rC₅₀): >10,0mg/litre (*Scenedesmus subspicatus*).

13. DISPOSAL CONSIDERATION

Pesticide disposal:

Contaminated absorbents, surplus product, etc., should be burned in a high-temperature incinerator (>1000°C) with effluent gas scrubbing. Never pour untreated waste or surplus

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products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

Package product wastes:

Emptied containers retain vapour and product residues. Observe all labeled safeguards until container is destroyed. Combustible containers should be disposed of in pesticide incinerators. Non-combustible containers must be punctured and transported to a scrap metal facility for recycling or disposal in approved landfill site. Comply with any local legislation applying to disposal.

S 2 Keep out of the reach of children
S22 Do not breathe dust
S44 If you feel unwell, seek medical advice.

National Legislation:

In accordance with 91/155/EEC Directive and with French standard T01-102 and the South African Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

14. TRANSPORT INFORMATION

Un Number: 2902
ADR/IRD: Pesticide, liquid, toxic.
(imidacloprid 200g/l)
Substance name: Imidacloprid 200g/l
Substance ID NR: 2902
Label: 6.1
AIR/IATA :
Class: 6.1
Hazard Label: Toxic
Shipping name: Pesticide, liquid, toxic
(imidacloprid 200g/l)
Packaging group: III
IMDG/IMO:
Packaging group: III
Label of class: 6.1 **Marine Pollutant**
Shipping Name: Pesticide, liquid, toxic.
(imidacloprid 200g/l)

15. REGULATORY INFORMATION

Symbol : Xn
Indication of danger: Harmful
Risk phrases :
R22 Harmful if swallowed.
Safety phrases :

16. OTHER INFORMATION

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.

It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations(s) containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

REFERENCES

- *The Pesticide Manual*; Eleventh Edition; Editor Clive Tomlin; Crop Protection Publications, 1997.
- *IPCS*; Health and Safety Guide No. 22; World Health Organisation, Geneva, 1990.
- *Pharmacological Basics of Therapeutics*; International Edition; Alfred Goodman

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Perry B. Molinoff, Raymond W. Ruddon.

- *EuroChem Monitor*; European Community Legislation on the Marketing and Use of Dangerous Substances and Preparations, Volume 1 and 5
- *Dangerous Goods Regulations; IATA 2000*; International Air Transport Association, 41st Edition, Effective 1 January 2000.
- EXTOTOXNET, Revised June 1996