

MATERIAL SAFETY DATA SHEET

Section 1. Company Contact and Chemical Product Information

Product Name: **LADA[®] 2F** Insecticide
EPA Reg. No.: 83100-6-83979
Product Code: 0407-M-1GL
Corporate Contact: 1-866-927-6826
Emergency number for spills and cleanup: CHEMTREC: 1-800-424-9300
Chemical Name of Active Ingredient (IUPAC):
1-(6-chloro-3-pyridylmethyl)-N-nitroimidazolidin-2-ylideneamine
Chemical Formula of Active Ingredient:
 $C_9H_{10}ClN_5O_2$
CAS/EU Registry Number of Active Ingredient:
138261-41-3 (CAS); 582 (CIPAC)

Section 2. Composition/Information on Ingredients

Component	CAS Number	Content (%)
Imidacloprid	138261-41-3	21.4
Inert ingredients	Proprietary	78.6

Section 3. Hazards Identification

CAUTION: Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing.

Section 4. First Aid Measures

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

If in Eyes: Hold eye 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 treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

Note to Physician: No specific antidote. Treat symptomatically.

For information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378 or a poison control center for assistance.

Section 5. Fire Fighting Measures

Fire and Explosive Hazard: Negligible fire and explosion hazard. Not flammable.

Firefighting Media: Foam, carbon dioxide, dry chemical or water spray to extinguish fire.

Firefighting Precaution: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Keep unnecessary people away. Dike area of fire to prevent material run-off. Decontaminate emergency personnel with soap and water before leaving the fire area. Avoid breathing dusts, vapors and fumes from burning materials. Control run-off water.

Section 6. Accidental Release Measures

In case materials are released, contact emergency response personnel. Keep unnecessary persons away. If emergency response personnel are unavailable, absorb small spills on spill pillows or other suitable absorbing material (e.g. sand, soil or diatomaceous earth) and place in a sealed container for disposal. Dike large spills and transfer to an appropriate container for disposal. Avoid contact of spilled materials and runoff with soil and surface waterways. Use suitable protective equipment (Section 8). Follow all fire prevention procedures (Section 5).

Section 7. Handling and Storage

Handling Precautions: Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or spray mist. Clean applicator and measuring equipment before using with other products and dispose of wash water where it will not contaminate crops, grazing, rivers and dams. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash thoroughly after handling.

Storage Precautions: Store in the original container and keep closed. Store in cool, dry and well-ventilated place. Keep out of reach of children. Keep away from food, drink and animal feeding stuffs.

Section 8. Exposure Controls/Personal Protection

Engineering Controls: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system.

Eye/Face: To protect against accidental eye contact, goggles/face-shield should be worn.

Skin Protection: Rubber gloves should be worn. Wash thoroughly with soap and water after handling.

Respiratory Protection: Ensure good ventilation. For maximum protection, wear a supplied air, full-facepiece respirator, air lined hood, or full-facepiece self-contained breathing apparatus.

Section 9. Physical and Chemical Properties

Appearance	Off-white viscous liquid
Odor	No characteristic odor
Specific Gravity	1.108
Water Solubility	Disperse in water

Section 10. Stability and Reactivity

Stability: Stable under normal handling and storage conditions.

Incompatibilities: Avoid mixed with highly reactive chemicals such as strong acid, strong base or strong oxidizing agent.

Hazard Decomposition: Thermal decomposition products contain oxides of carbon, oxides of nitrogen, hydrochloride.

Hazard Polymerization: Will not occur.

Section 11. Toxicological Information

Acute Oral Toxicity: LD50 for rats >2000 mg/kg

Acute Dermal Toxicity: LD50 for rats >2000 mg/kg

Acute Inhalation Toxicity: LC50 (4h) for rats > 5.50g/L

Skin Irritation: Non-irritating to skin of rabbits.

Eye Irritation: Slightly irritating to eyes of rabbits.

Skin sensitization study in Guinea pigs: Not considered as a potential sensitizer.

Section 12. Ecological Information

This product may be toxic to birds and aquatic organisms. Avoid release to the environment in circumstances different to normal use. Referenced technical active ingredient ecological information list as below:

Birds	Acute oral LD50 for Japanese quail 31, bobwhite quail 152 mg/kg. Dietary LC50 (5 d) for bobwhite quail 2225, mallard duck >5000 mg/kg.
Fish	LC50 (96 h) for golden orfe 237, rainbow trout 211 mg/l.
Bee	Harmful to honeybees by direct contact, but no problems expected when not sprayed into flowering crop or when used as a seed treatment.

Environmental Fate:

Animals	After oral administration of methylene- ¹⁴ C- and 4,5-imidazolidine- ¹⁴ C-labeled imidacloprid to rats, the radioactivity was quickly and almost completely absorbed from the gastro-intestinal tract and quickly eliminated (96% within 48 hours, mainly via the urine). Only 15% was eliminated as unchanged parent compound; the most important metabolic steps were hydroxylation at the imidazolidine ring, hydrolysis to 6-chloronicotinic acid, loss of the nitro group with formation of the guanidine and conjugation of the 6-chloronicotinic acid moiety. Imidacloprid is also quickly largely eliminated from hens and goats.
----------------	---

Ecological Information continued . . .

Plants Metabolism was investigated on rice (after soil treatment), maize (seed treatment), potatoes (granule or spray application), aubergines (granules) and tomatoes (spray treatment). In all cases, imidacloprid is metabolized by loss of the nitro group, hydroxylation at the imidazolidine ring, hydrolysis to 6-chloronicotinic acid and formation of conjugates; all metabolites contained the 6-chloropyridinyl-methylene moiety.

Soil/Environment:

In laboratory studies, the most important metabolic steps were oxidation at the imidazolidine ring, reduction or loss of the nitro group, hydrolysis to 6-chloronicotinic acid and mineralisation; these processes were strongly accelerated by vegetation. Imidacloprid shows a medium adsorption to soil. Column leaching tests (with prior ageing) with a.i. and various formulations showed that imidacloprid and soil metabolites are to be classified as immobile; leaching into deeper soil layers is not to be expected if imidacloprid is used as recommended. Stable to hydrolysis under sterile conditions (under exclusion of light). Environmental DT₅₀ 4 h (calc., based on tests of direct photolysis in aqueous solutions). Besides sunlight, the microbial activity of a water/sediment system is an important factor for the degradation of imidacloprid.

Section 13. Disposal Considerations

Disposal of product would be treated, stored, transported, and disposed of according to the local waste regulation authority. Do not flush to surface water or sanitary sewer system.

Section 14. Transport Information

US DOT Classification: Not regulated for Domestic Surface Transportation - 49CFR (DOT)

B/L Freight Classification: Item 102120 [Insecticides, Fungicides, Insect or Animal Repellents] Class 60

IMO Classification: Not regulated - 49CFR 173.132 (B) (3)

IMDG Classification: Not regulated - IMDG 2.6.2.1.3

IATA Classification: Not regulated - IATA 3.6.1.5.3

Section 15. Regulatory Information

USEPA Registered Company Address:

Rotam North America, Inc., 4900 Koger Blvd. Suite #140, Greensboro, NC 27407

Product Signal Word: CAUTION

European/International Regulation:

Hazard Symbols:

Xn Harmful.

Risk Phrases:

R 22 Harmful if swallowed.

Safety Phrases:

S 1/2 Keep locked-up and out of reach of children.

S 13 Keep away from food, drink and animal feeding stuffs.

S 20 When using do not eat or drink.

S 24/25 Avoid contact with skin and eyes.

Section 16. Other Information

Disclaimer: The information provided by Rotam North America, Inc. contained herein is given in good faith and to the best of our knowledge. However, no warranty is expressed or implied.