

US EPA ARCHIVE DOCUMENT

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TO: Dennis Edwards
Product Manager PM 19
Registration Division (H7505C)

FROM: Akiva D. Abramovitch, Ph.D., Head
Environmental Chemistry Review Section #3
Environmental Fate & Ground Water Branch, EFED (H7507C)

THRU: Henry Jacoby, Chief
Environmental Fate & Ground Water Branch, EFED (H7507C)

Attached, please find the EFGWB review of...

Reg./File # :129009

Common Name :Imidacloprid

Product Name :PREMISE Termiticide; PREMISE 2 TC; NTN 33893 2; NTN 33893 240 FS

Company Name :Miles Inc.

Purpose : Miles Agriculture Division is submitting an application for an EUP to evaluate the effectiveness of imidacloprid as a termiticide.

Type Product :Insecticide Action Code: 700 EFGWB #(s): 93-0124 Review Time: 1.0 days

EFGWB Guideline/MRID/Status Summary Table: The review in this package contains...

161-1	162-4	164-4	166-1
161-2	163-1	164-5	166-2
161-3	163-2	165-1	166-3
161-4	163-3	165-2	167-1
162-1	164-1	165-3	167-2
162-2	164-2	165-4	201-1
162-3	164-3	165-5	202-1

Y = Acceptable (Study satisfied the Guideline)/Concur P = Partial (Study partially satisfied the Guideline, but additional information is still needed)
S = Supplemental (Study provided useful information, but Guideline was not satisfied) N = Unacceptable (Study was rejected)/Non-Concur

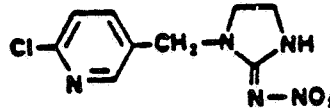
1. CHEMICAL:

Common Name: Imidacloprid

Chemical Name: 1-((6-Chloro-3-pyridinyl)methyl)-4,5-dihydro-N-nitro-1H-imidazol-2-amine.
1-[(6-chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine.
Preferred tautomer.

Type of product: Insecticide

Chemical Structure:



Physical/Chemical Properties

Molecular formula: $C_9H_{10}N_5O_2Cl$.

Molecular weight: 255.67.

Physical state: Light yellow powder.

Density: 1.542 g/cm³.

Vapor pressure (20 C): 6.0×10^{-9} Torr.

Solubility (20 C): 0.58 g/L water.

K_{ow} : 3.7 @ 21°C

2. TEST MATERIAL:

All names apply:

PREMISE Termiticide; PREMISE 2 TC; NTN 33893 2; NTN 33893 240 FS

3. STUDY/ACTION TYPE:

Miles Agriculture Division is submitting an application for an EUP to evaluate the effectiveness of imidacloprid as a termiticide.

4. STUDY IDENTIFICATION:

(1) MRID No: 42542400

Letter from John S. Thorton Miles Inc., to Dennis Edwards EPA registration division dated November 2, 1992.

2. Discussion of risk information.

3. Product data sheet and label.

4. Description of proposed experimental program.

5. REVIEWED BY:

Kevin L. Poff, Chemist
Environmental Chemistry Review Section #3
Environmental Fate and Groundwater Branch/EFED

Kevin Poff
Date:

6. APPROVED BY:

Akiva Abramovitch, Ph.D., Chemist
Environmental Chemistry Review Section #3
Environmental Fate and Groundwater Branch/EFED

Akiva Abramovitch
Date: FEB 25 1992

7. CONCLUSIONS:

1. The EFGWB supports the proposed experimental use permit (EUP) for PREMISE (NTN 33893 technical) on up to 90 houses per year for 3 years at a maximum treatment rate of 0.1% concentration (0.86 gallons) per dwelling. A maximum of 232.2 gallons (470 lbs ai) of PREMISE Termiticide will be required to treat 270 homes over the 3 year period.

8. RECOMMENDATIONS:

Inform the registrant that the EFGWB has sufficient acceptable data to support the terrestrial non-food use of the proposed EUP of PREMISE (NTN 33893) as a termiticide with the maximum of 232.2 gallons (470 lbs ai) of imidacloprid to be used on 270 homes over 3 years. However, the EFGWB is concerned about ground and surface water contamination because of the persistency of imidacloprid and the leaching/adsorption/desorption data indicate that imidacloprid is moderately mobile. Also, the EFGWB recommends that the houses to which imidacloprid will be applied should not be concentrated in a small area to minimize environmental risks.

All of the following data supporting the EUP for the terrestrial nonfood use have been submitted to the EFGWB:

- Hydrolysis (161-1); Satisfies the data requirement; Stable at pH 5, 7, some degradation at pH 9 $t_{1/2} = 355$ days.
- Aerobic soil metabolism (162-1); Satisfies the data requirement; Degraded with a half-life of > 1 year
- Adsorption/Desorption (163-1); Does not satisfy, but can be upgraded. $K_{d_{ads}}$ values ranged from 1.17-3.59.
- Leaching (163-1); Partially satisfies the 163-1 data requirement by supplying information on the leaching of aged imidacloprid in a sandy loam soil. 48.5% of applied radioactivity remained in the applied soil layer (to top of soil column). 37% of applied was found in the 0-5 cm layer. 10.8% of applied was found in the 5-10 cm layer. 4.2% of applied was found in the 10-15 cm layer. 1.8% was found in the 15-20 cm layer. 0.3% of applied was found in the 20-30 cm layer. 0.14% of the applied was found in the leachate.
- The Bioaccumulation in fish (165-4) study is waived due to the low octanol/water partition coefficient. Subdivision N guidelines state the 165-4 data is not required if the octanol/water partition coefficient is less than approximately 1000. The octanol/water partition coefficient for NTN 33893 is 3.7.

9. BACKGROUND :

This is the third EUP Miles Inc. has requested on the new chemical imidacloprid (NTN 33893). The two others were supported by the EFGWB and were field studies to: a) evaluate the effectiveness to exterminate Japanese beetles on areas around airports, and; b) to apply to golf course turf to evaluate possible avian effects.

NTN 33893 is a systemic insecticide which can act as a contact stomach poison. It is a terrestrial non-food chemical. Formulations include NTN 33893 Technical, NTN 33893 75% Concentrate, NTN 33893 0.62% Granular, NTN 33893 2.5% Granular, and NTN 33893 2.

10. DISCUSSION:

1. Single applications will be made to structures or dwellings identified as being infested with active populations of subterranean termites. Applications will be made by a licensed Pest Control Operator.

11. COMPLETION OF ONE-LINER:

N/A

12. CBI INDEX:

N/A