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Cindy I. Keller  
Nor-Am Chemical Company  
3509 Silverside Road  
P.O. BOX 7495  
Wilmington, DE 19803

SEP 29 1987

Dear Ms. Keller:

Subject: Amendment/Registration Standard Label  
Statements and Clarify Row Treatment  
Vorlex 201  
EPA Registration No. 45639-91  
Your Submissions dated November 10, 1986,  
April 14, January 29, and May 19, 1987

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

- a. Add the following statement to the precautionary text:

Field Reentry

Workers entering the treated area for 72 hours after application of 1,3-dichloropropene must wear protective clothing.

- b. We recommend you add a statement below the ingredient statement which indicates the product weight per gallon.

2. Submit one copy of your final printed labeling before you release the product for shipment.

CONCURRENCES

SYMBOL							
SURNAME							
DATE							

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A stamped copy of the labeling is enclosed for your records.

Sincerely yours,

Lois A. Rossi  
Product Manager 21  
Fungicide-Herbicide Branch  
Registration Division

CONCURRENCES							
SYMBOL							
SURNAME							
DATE							

# SPECIMEN LABEL

ACCEPTED  
with conditions  
by EPA

## RESTRICTED USE PESTICIDE

For retail sale to, and use only by, Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

FOR AGRICULTURAL USE ONLY

SEP 29 1987

Under  
Fur  
reg  
45639-91  
EPA Reg. No.

# Vorlex<sup>®</sup> 201

## SOIL FUMIGANT

### ACTIVE INGREDIENTS:

1,3-dichloropropene and other related chlorinated C <sub>3</sub> hydrocarbons	34.0%
Methyl isothiocyanate	17.0%
Chloropicrin	15.0%

### INERT INGREDIENTS

Total	34.0%
	100.00%

EPA Reg. No. 45639-91

EPA Est. No. 08800 IL-1

**PRECAUCION AL USUARIO:** Si usted no lee ingles, no use este producto hasta que el etiqueta haya sido explicado ampliamente.

**KEEP OUT OF REACH OF CHILDREN**

 **DANGER - POISON**   
**PELIGRO - VENENO**

### STATEMENT OF PRACTICAL TREATMENT

**IF INHALED:** REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.

**IF ON SKIN:** IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN. IF WATER IS NOT IMMEDIATELY AVAILABLE, REMOVE EXCESS CHEMICAL FROM SKIN WITH ABSORBENT MATERIAL SUCH AS TOWEL OR DRY SOIL, THEN PROCEED AT ONCE TO LOCATION WHERE WATER IS AVAILABLE AND THOROUGHLY WASH CONTAMINATED SKIN WITH PLENTY OF WATER. CALL A PHYSICIAN.

**IF IN EYES:** IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER OR A 5% SOLUTION OF SODIUM BICARBONATE FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN. CONTINUE TREATMENT WITH OPHTHALMIC HYDROCORTISONE OINTMENT.

**IF SWALLOWED:** IMMEDIATELY CALL A PHYSICIAN OR POISON CONTROL CENTER. DO NOT INDUCE VOMITING. NOTE TO PHYSICIAN: EMPTY STOMACH CONTENTS BY GASTRIC LAVAGE.

SEE LEFT PANEL FOR ADDITIONAL PRECAUTIONS  
**DO NOT REUSE ORIGINAL CONTAINER UNLESS RECONDITIONED**



NOR-AM CHEMICAL COMPANY  
3509 Silverside Road, P.O. Box 7495  
Wilmington, DE 19803

### NET CONTENTS:

PROTECTED BY U.S. PAT. NOS. 3,208,129;  
3,113,928; 3,240,886; 3,285,561.

# PRECAUTIONARY STATEMENTS

## HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER. Causes severe eye damage. May be fatal, if inhaled, absorbed through skin, or swallowed. Do not get in eyes, on skin or on clothing. Do not take internally. Do not breathe vapor. Use only with adequate ventilation.

Causes burns of skin and eyes. May produce kidney and liver damage upon prolonged exposure. Wear chemical worker goggles, face shield or safety glasses. Wash thoroughly with soap and water after handling, and before eating and smoking.

The use of this product may be hazardous to your health. This product contains 1,3-dichloropropene which has been determined to cause tumors in laboratory animals. Risks can be reduced by closely following the use directions and precautions, and by wearing protective clothing specified elsewhere on this label.

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# STORAGE, SHIPMENT AND DISPOSAL

**STORAGE** — Store in tightly-closed container in a cool place away from dwellings. Do not allow contamination of seeds, plants, fertilizers, or other pesticide chemicals. Do not contaminate food, feedstuffs, drugs or domestic water supplies. In outside storage, store drums (make sure that bungs are tightly closed) on sides to avoid accumulation of rain water in top or bottom of recessed areas.

**SHIPMENT** — Do not ship or store with food, feeds, drugs or clothing.

**PESTICIDE DISPOSAL** — Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are toxic.

Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL** — Triple rinse. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

**DO NOT REUSE ORIGINAL CONTAINERS UNLESS RECONDITIONED**

## GENERAL INFORMATION

Vorlex 201 SOIL FUMIGANT is used as a preplant treatment in both field and greenhouse soils to be planted to ornamentals or flowers such as mums, lilies, gladiola, iris, carnations, evergreens; vegetables such as celery, lettuce, garden beets, tomatoes, eggplant, beans, melons, squash; field crops such as tobacco, cotton, potatoes, onions, mint; small fruits such as strawberries, raspberries; fruit trees such as cherry, peach; citrus trees such as orange, lemon.

In the soil Vorlex 201 vaporizes and diffuses helping to control plant parasitic nematodes and harmful fungi (including *Fusarium oxysporum lycopersici*) causing

and F.  
(inl.)

damping-off, root-rot and wilt. Vorlex 201 also helps control soil insects such as wireworms, symphylids and others. Vorlex 201 helps control weeds such as pigweed, dandelion, lambsquarters, bermudagrass, purslane, crabgrass, quackgrass, spurge, fleabane, sedge, chickweed, ragweed, mustard, Poa spp., smartweed, wild radish, dodder, velvetleaf and shepherdspurse.

### PHYSICAL OR CHEMICAL HAZARDS

#### FLAMMABLE

DO NOT USE, POUR, SPILL, OR STORE NEAR HEAT OR OPEN FLAME.

DO NOT CUT OR WELD CONTAINER. FIRE OR EXPLOSION

MAY RESULT EVEN IF CONTAINER IS EMPTY ENVIRONMENTAL HAZARDS.

This product is toxic to fish and wildlife. Do not apply directly to water or wetlands. Do not contaminate water or wetlands by cleaning of equipment or disposal of wastes. In case of spills, properly dispose of contaminated materials.

**HANDLING PRECAUTIONS**

**DO NOT GET ON SKIN -**

index

**REQUIRED CLOTHING AND EQUIPMENT DURING THE HANDLING AND APPLICATION OF VORLEX**

One-piece coveralls which have long sleeves and long pants constructed of laminated fabric as specified in the USDA/EPA Guide for Commercial Applicators.

(6)

Liquid-proof hat such as a plastic hard hat with a plastic sweat band.

Heavy duty liquid-proof (neoprene/synthetic) work gloves and boots.

Any article worn while handling VORLEX<sup>201</sup> must be washed before reusing.

(6)

Immediately remove all clothing which has been drenched or has otherwise absorbed VORLEX<sup>201</sup> from any spill. Dispose of contaminated clothing in a sanitary landfill by incineration, or if allowed by state and local authorities by burning. If burned, stay out of smoke.

Never wear protective gear having odor of Vorlex 201. Wash and aerate all protective gear thoroughly after use until all odor is gone.

**HANDLING PRECAUTIONS**

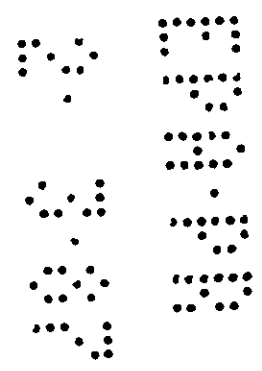
**DO NOT INHALE VAPORS** - NIOSH- or MSHA- approved respiratory protection should be worn when Vorlex 201 liquid soil fumigant is exposed to the atmosphere or when conducting operations which vent to the atmosphere. A NIOSH- or MSHA- approved half-face respirator with chemical worker's goggles or full-face respirator shall be used during small spills, repairs, calibrations, transfers, sampling and when working in poorly ventilated areas. When in use canisters or cartridges shall be replaced daily or sooner if specified by manufacturer or at first sign of odor breakthrough, whichever comes first. NIOSH-approved cartridges, such as a WILLSON R21 will be adequate for short term situations such as listed above.

Where very high concentrations of vapors might be expected (such as large spills in poorly ventilated areas), a self-contained or air-supplied respirator should be used.

**DO NOT GET IN EYES** - Wear eye protection such as chemical worker's goggles, or full-face respirator when handling Vorlex 201. <sup>safety glasses</sup>

**DO NOT SWALLOW** - Do not use the mouth to siphon Vorlex 201 from containers or to blow out clogged lines, nozzles, etc.

**FOR CHEMICAL EMERGENCY - Spill, Leak, Fire, Exposure or Accident - Call 800/424-9300 DAY OR NIGHT**



### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**USE PRECAUTIONS:** As with most soil fumigants, application of Vorlex 201 may temporarily raise the level of ammonia nitrogen and soluble salts in the soil which may result in plant injury. This is most likely to occur when heavy rates of fertilizer or fumigant are applied to soils that are either cold, wet, acid or high in organic matter.

Do not add fertilizers containing nitrates until the soil temperature is above 65°F and the crop is well established.

Do not allow liquid or vapors to come in contact with lawn and desirable plants; do not apply on areas beneath which roots of desirable plants extend.

Do not use in greenhouses which contain living plants.

Do not fumigate if the soil temperature at 3 inch depths is over 90°F.

Avoid reinfestation of treated soil. Do not contaminate treated soil with untreated soil. Do not use transplants or tools which could carry soil-borne pests from infested land. Clean equipment carefully before using.

Vorlex® 201 may be corrosive under certain conditions. Flush all applicators with fuel oil or kerosene immediately after use. **DO NOT USE WATER.** Do not use containers or equipment of aluminum, magnesium or their alloys. Close containers tightly.

**TIME OF APPLICATION:** Treatment can be made at any time the soil is workable. Fall or winter application is desirable for crops which are planted early in the spring.

**PREPARATION OF SOIL:** FOR OPTIMUM CONTROL WITH VORLEX 201 FOLLOW THESE STEPS CAREFULLY.

(1) Work crop remains into the soil so that they are well decomposed before treatment. (2) In shrub and tree replant sites remove as much of the root system as possible. (3) Break up all clods and loosen soil thoroughly by cultivation one week before treatment. Deep tillage is recommended, particularly for deep-rooted crops. Always work soil deeper than intended application depth. (4) Keep soil moist from the surface to a depth of six inches and maintain in this condition for one week before fumigation. **DO NOT FUMIGATE DRY SOILS.**

**APPLICATION AND DOSAGE:** Use injection type applicators. For broadcast application, set shanks 8" to 8" apart; for a band treatment, set shanks 8" apart. Inject at a depth of 6" to 8".

**Row treatment:** Adjust injection chisels to same spacing as planter. Seal the treated strips by bedding or listing. Always inject the fumigant at least 6-8" below the final soil (planting) surface. Before planting, remove the tops of the beds, being careful that none of this soil falls over on the fumigated band.

#### DOSAGE

Pest	Soil Type	Overall (Broadcast) Application		Row or Band (8" centers) Application
		per acre	per 100 sq. ft.	per chisel per 100 linear ft.
Nematodes	Mineral	7-15 gal	2-4½ fl oz	40-87 ml.
	Organic <sup>1</sup> (Muck)	10-25 gal	3-7½ fl oz	58-145 ml
Weeds <sup>1</sup> , fungi, nematodes and soil insects	Mineral	25-50 gal <sup>1</sup>	7½-14¾ fl oz.	145-290 ml <sup>1</sup>
	Organic <sup>1</sup> (Muck)	40-60 gal.	11¼-17½ fl oz.	232-348 ml.

(The above recommendations may vary because of local conditions. Consult your local agricultural authority for regional recommendations.)

<sup>1</sup>For best weed control, use the higher dosages indicated. Inject at 4-inch depth and cover with tarp for 4 days.

<sup>2</sup>If Vorlex 201 is used in heavy clay soils, an extended aeration period may be required.

<sup>3</sup>For citrus and other orchard trees where deep penetration is desirable, use 60-70 gallons per acre of Vorlex 201 (17½-20½ fl oz. per 100 sq. ft.)

**IMMEDIATELY** after application, drag the soil to remove chisel marks, then firm it with a smooth roller. If additional water is required, apply only the amount necessary to wet the soil to a depth of one-half inch. If a tarp seal is used, lower dosages may be effective.

In soils 70°F or higher at 6" depth, special attention should be given to sealing the surface of the soil. Tarping gives the best seal.

**FUMIGATION PERIOD:** After application at soil temperature at 60°F or above, keep soil moist and undisturbed for a minimum of 4 days; 7 days is preferable. Use a shorter fumigation period if it has been shown effective.

Colder soils require a longer fumigation period. If these conditions occur, allow at least one to three weeks for the fumigation period depending upon the temperature.

In fall or winter application the fumigation period should extend until spring. The soil should be undisturbed during this period.

**AERATION PERIOD:** FOR SOIL TEMPERATURES ABOVE 60°F (AT 6" DEPTH), aerate soil at the end of the fumigation period by cultivation e.g., disking. Repeated cultivation will aid release of the fumigant and is especially desirable if heavy rains occur during the fumigation period. If soil crusting occurs, it retards aeration and must be broken up. Repeated cultivation may be necessary to prevent soil crusting.

Aerate until the fumigant has completely escaped from the soil. This is usually accomplished by allowing one week between cultivation (end of fumigation period) and planting for each 12 gallons per acre of Vorlex 201.

**FOR SOIL TEMPERATURES BELOW 60°F (AT 6" DEPTH),** longer aeration periods than those mentioned above will be required. Repeated deep cultivation is especially important when heavy rains or very wet soil accompany low soil temperatures, since these conditions retard aeration.

**Do Not Plant When The Odor Of The Fumigant Is Still Detectable.**

#### IMPORTANT: READ BEFORE USE

By using this product, user accepts the following conditions, warranty, disclaimer of warranties and limitations of liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and should be followed carefully. However, because of extreme weather and soil conditions, manner of use and other factors beyond NOR-AM Chemical Company's control, it is impossible for NOR-AM to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible.

**DISCLAIMER OF WARRANTIES:** THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of NOR-AM Chemical Company is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. UNDER NO CIRCUMSTANCES SHALL NOR-AM CHEMICAL COMPANY BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM FAILURE TO USE THIS PRODUCT IN ACCORDANCE WITH LABEL DIRECTIONS.

**LIMITATIONS OF LIABILITY:** In no event shall NOR-AM Chemical Company's liability for damages arising out of the use of this product exceed the purchase price of the product used.

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