



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

005254

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

DATE: February 16, 1984  
SUBJECT: EPA File Symbol 2139-REI  
SN 578  
FROM: Deloris F. Graham *DFG* 2/22/84  
FHB/ISS  
TO: Henry Jacoby  
Product Manager (21)

Applicant: Nor-Am Agricultural Products, Inc.  
350 West Shuman Boulevard  
Naperville, Illinois 60566

Active Ingredients:

1,3-dichloropropene and other  
related chlorinated hydrocarbons.....34.0%  
Methyl Isothiocyanate.....17.0%  
Chloropicrin.....15.0%  
Inert Ingredients.....34.0%

Background: Submitted Acute Oral and Acute Dermal Studies and an explanation as to why the Acute Inhalation, Eye Irritation, Primary Dermal Irritation and Dermal Sensitization studies are not required. Studies conducted by International Research and Development Corporation. Data under accession number 251665. Method of support not indicated.

Recommendation:

1. FHB/ISS finds the Acute Oral and Acute Dermal Studies acceptable to support the conditional registration of this product.
2. Acute Inhalation, Eye Irritation and Primary Dermal Irritation studies were not submitted. These data along with the Acute Oral and Acute Dermal studies must be submitted on each formulated product.

**BEST AVAILABLE COPY**

**BEST COPY AVAILABLE**

*1786*

005254

Label:

1. Appropriate precautionary labeling cannot be determined until previously mentioned data are submitted.

Review:

1. Acute Oral Toxicity Data: International Research and Development Corporation; October 17, 1983.

Procedure: Four groups consisting of five male and five female Sprague-Dawley rats, weighing between 203 and 275 grams received one of the following doses orally: 363, 439, 531 or 643 mg/kg. Observations were made at 1, 2-1/2 and 4 hours after treatment, then once daily thereafter for 14 days. Necropsy performed on all animals.

Results: At 439 mg/kg, 1/5 M and 3/5 F died; at 531 mg/kg, 3/5 M and 3/5 F died; at 643 mg/kg, 5/5 M and 5/5 F died. Toxic signs reported included hypoactivity, various stains on or around the nose and/or mouth, piloerection, ataxia, impaired righting reflex, high carriage, diarrhea, ptosis, tremors, low incidence of anogenital staining. Necropsy report revealed thickening of the walls of the stomach; ulceration of the stomach's non-glandular mucosa and abdominal cavity adhesions in all terminally sacrificed rats. In rats that died during the study, necropsy revealed hyperemia of the mucosa of some portion of the gastrointestinal tract and various external stains. No other significant findings noted in necropsy. LD<sub>50</sub> for males reported to be 500 mg/kg with 95% confidence limits between 452 and 554 mg/kg. LD<sub>50</sub> for females reported to be 466 mg/kg with 95% confidence limits between 413 and 526 mg/kg. LD<sub>50</sub> for males and females combined was reported to be 433 mg/kg with 95% confidence limits between 446 and 523 mg/kg.

Study Classification: Core Guideline Data.

Toxicity Category: II - WARNING

2. Acute Dermal Toxicity Study: International Research and Development Corporation; October 13, 1983.

Procedure: Four groups consisting of five male and five female New Zealand rabbits received one of the following doses: 1000, 1200, 1440 or 1728 mg/kg at intact skin sites under occlusive wrap for 24-hour exposure. Observations were made at 1, 2-1/2 and 4 hours after treatment, then once daily thereafter for 14 days. Necropsy performed on all animals.

Results: At 1000 mg/kg, 1/5 M and 1/5 F died; at 1200 mg/kg, 2/5 M died; at 1440 mg/kg, 4/5 M and 4/5 F died; at 1728 mg/kg, 3/5 M and 4/5 F died. Toxic signs reported included nasal discharge and excessive saliva ion, labored breathing, tachypnea, miosis, mydriasis, hypersensitivity

BEST AVAILABLE COPY 7

BEST COPY AVAILABLE

to touch, hypoactivity. Erythema, edema and subcutaneous hemorrhage were also noted. Necropsy revealed thickening, redness, blanching and fissuring. Consolidation or congestion of the lungs was also noted at necropsy. No other abnormalities noted. LD<sub>50</sub> for males was reported to be 1319 mg/kg with 95% confidence limits between 1030 and 1689 mg/kg. LD<sub>50</sub> for females was reported to be 1367 mg/kg with 95% confidence limits between 1177 and 1589 mg/kg. LD<sub>50</sub> for males and females combined was reported to be 1343 mg/kg with 95% confidence between 1131 and 1532 mg/kg.

Study Classification: Core Guideline Data.

Toxicity Category: II - WARNING

BEST AVAILABLE COPY

3

BEST COPY AVAILABLE

005254

RESTRICTED USE PESTICIDE (Same size as DANGER)

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.



# SN 578

## SOIL FUMIGANT

1,1-dichloroethene and other related chlorinated hydrocarbons.....	35.00
Methyl isocyanate.....	17.00
Chloroplatin.....	15.00
Inert ingredients.....	33.00
	100.00

KEEP OUT OF REACH OF CHILDREN



PELIGRO

PRECAUCION EL USUARIO: Si usted no lee ingles, no use este producto hasta que le expliquen haya sido explicado apropiadamente.

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS & DOMESTIC ANIMALS

HAZARDOUS VAPOR AND LIQUID. MAY BE FATAL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN. CAUSES BURNS OF SKIN AND EYES. MAY PRODUCE KIDNEY AND LIVER DAMAGE UPON PROLONGED EXPOSURE.

Do Not Breathe Vapor. Do Not Get in Eyes, On Skin, Or On Clothing. Do Not Take Internally. Use Only With Adequate Ventilation. Wear Eye And Skin Protection Necessary To Prevent Contact When Handling. Wash Thoroughly After Handling And Before Eating Or Smoking.

If protective gear, such as boots or gloves, becomes contaminated, immediately wash with soap and water. Never wear protective gear having the odor of SN 578. Aerate and wash all protective gear thoroughly after use until all odor is gone. Render unusable and dispose of contaminated leather goods, including shoes.

### 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 wash 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 stained clothing from skin with absorbent material such as paper 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 for 15 minutes or solution of sodium bicarbonate for at least 15 minutes. Call a physician. Continue treatment with sodium bicarbonate solution.

**IF SWALLOWED:** Immediately induce vomiting by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person.

SEE LEFT PANEL FOR ADDITIONAL PRECAUTIONS  
REGISTERED BY U.S. PAT. NOS. 2,328,125; 2,328,126; 2,328,127; 2,403,840; 2,403,841; 2,403,842

NET CONTENTS, 55 GALLONS



MANUFACTURED FOR  
**NOR-AM.**  
AGRICULTURAL PRODUCTS CO.  
NAPERVILLE, ILLINOIS 60563

**BEST AVAILABLE COPY**

BEST COPY AVAILABLE

005254

### GENERAL INFORMATION

SN 573 SOIL FUMIGANT is used as a preplant treatment in both field and greenhouse soils to be planted to ornamentals or to crops such as mums, lilies, gladioli, iris, carnations, evergreens; vegetables such as celery, lettuce, garden beets, tomatoes, eggplant, beans, melons, squash; field crops such as tobacco, cotton, potatoes, onions, mint, and fruits such as strawberries, raspberries; fruit trees such as cherry, peach; citrus trees such as orange, lemon.

In the soil SN 573 residues and diffuses helping to control plant parasitic nematodes and nematode fungi including *Fusarium oxysporum* f. *concoeris*, race 2) causing damping-off, rootrot and wilt. SN 573 also helps control soil insects such as wireworms, symphids and others. SN 573 helps control weeds such as pigweed, sanderson amaranth, bermudagrass, burbanke, crabgrass, duckgrass, sours, ryegrass, sedge, chickweed, ragweed, mustard, red top, 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

#### ENVIRONMENTAL HAZARDS

This product is toxic to fish and wildlife. Do not spill or empty into streams, ponds or any other body of water. Do not contaminate water or wetlands by cleaning of equipment, disposal of wastes, or direct application.

### HANDLING PRECAUTIONS

**DO NOT INHALE VAPOURS**—NIOSH- or MESA-approved respiratory protection should be worn when SN 573 liquid soil fumigant is exposed to the atmosphere or when conducting operations which vent to the atmosphere. A NIOSH- or MESA-approved half-face respirator with chemical worker's goggles or full-face respirators 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 early 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 vapours might be expected (such as large spills in poorly ventilated areas), a self-contained or air-supplied respirator should be used.

**DO NOT GET ON SKIN**—When handling or working with SN 573, wear clean body covering, including gloves and heavy footwear. Immediately remove contaminated coverings. Aerate and wash all protective clothing and gear thoroughly after use.

There are no protective clothing materials that are completely impervious. Thin layers of polyethylene (minimum 1 mil), give short-term protection and shall be immediately discarded upon contamination. Heavy (3-mil) polyethylene provides longer term protection. Leather gives no protection. If gear becomes contaminated, immediately wash with soap and water. Never wear protective gear having odor of SN 573. Wash and aerate all protective gear thoroughly after use until all odors gone.

**DO NOT GET IN EYES**—Wear eye protection such as chemical worker's goggles or full-face respirator when handling SN 573.

**DO NOT SWALLOW**—Do not use the mouth to siphon SN 573 from containers or to blow out clogged lines, hoses, etc.

### STORAGE, SHIPMENT AND DISPOSAL

**STORAGE**—Store in tightly-closed original container in a cool place away from dwellings. Do not show 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** - Waste, including spills or rinsates, and leftover pesticide that cannot be used according to label instructions, must be disposed of according to applicable Federal, State, or local procedures.

**Container disposal** - Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other approved state and local procedures.

### DO NOT REUSE ORIGINAL CONTAINERS

### IMPORTANT: READ BEFORE PURCHASE OR USE

Purchase or use of this product shall constitute acceptance of the following terms of sale. NCR-AM Agricultural Products, Inc. (NCR-AM) warrants that this product conforms to the chemical descriptions on this label and is reasonably fit for the purposes specified hereon. By way of limitation but not in derogation of the directions and statements printed on this label, Seller makes no warranty and no representation and NCR-AM makes no further warranty or representation, expressed or implied, including but not limited to any warranty as to MERCHANTABILITY, and no agent of NCR-AM is authorized to do so except in writing, with a specified reference to the foregoing warranty. Since neither Seller nor NCR-AM has any control over the handling, storage, use or conditions of use of this product, Buyer or user assumes all risks and liability arising from handling, storage or use of this product under abnormal conditions or not in strict compliance with the directions and precautionary statements hereon. All claims related to the purchase, handling, storage or use of this product shall be denied unless written notice is given to NCR-AM within 30 days after the loss is discovered. Liability of the Seller or NCR-AM for any damages arising from a breach of this warranty shall be limited to exclude consequential commercial damages.

Trademark of Schering AG Berlin-Bergkamen FRG

**BEST AVAILABLE COPY**

Revised: 7/26/83

BEST COPY AVAILABLE

**DIRECTIONS FOR USE:**

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

- PRECAUTIONS:** As with most soil fumigants, application of **SN 573** may temporarily raise the level of ammonia and soluble salts in the soil which may result in plant injury. This is most likely to occur when heavy rates of fertilizer are applied to soils that are either acid, wet, acid or high in organic matter.
- Do not add fertilizers containing ammonia or ammonium salts or undecomposed manure to the soil at or near the time of application. Use only fertilizers containing nitrates until the soil temperature is above 55 °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 any of desirable plants extend.
  - Do not use in greenhouses which contain living plants.
  - Do not fumigate if the soil temperature at 3 inch depth 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.
  - SN 573** may be corrosive under certain conditions. Flush all applicators with 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 **SN 573** FOLLOW THESE STEPS CAREFULLY. (1) Work crop stems into the soil so that they are well decomposed before treatment. (2) In shrub and tree recipient 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. Two 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 COVERAGE:** Use injection type applicators. For broadcast application, set tanks 5' to 8' apart; for band treatment, set tanks 3' apart, inject at a depth of 3' to 6'.

**COVERAGE:**

Pest	Soil Type	Overall (Broadcast) Application		Row or Band
		per acre	per 100 sq. ft.	3' center Application
Nematodes	Mineral	7-8 gal.	3-4 1/2 fl. oz.	per 271-441 per 100 linear ft.
Nematodes	Organic/Mucky	10-25 gal.	3-7 1/2 fl. oz.	40-87 mi.
Weeds, fungi, nematodes and soil insects	Mineral	15-50 gal.	7 1/2-14 1/2 fl. oz.	53-145 mi.
Weeds, fungi, nematodes and soil insects	Organic/Mucky	10-60 gal.	11 1/2-17 1/2 fl. oz.	145-290 mi.
Ascarum brisatorum (cucumber root rot)	Mineral	25 gal.	10 1/2 fl. oz.	293 mi.

Use these recommendations only as a guide. Do not use if soil conditions cannot favor such application. Consult your local agricultural authority for specific recommendations. For best weed control, use the higher dosage indicated. Check at 3 inch depth and cover with top for 4 days. If used in heavy clay soils, an extended aeration period may be required. For shrubs and other perennial trees where deep penetration is desirable, use 10-15 gallons per acre of **SN 573**. 1 1/2-2 1/2 fl. oz. per 100 sq. ft. when **SN 573** is applied as a row or band treatment without using plastic cover. It is especially important to prevent reinfestation of the treated area with treated soil, contaminated equipment, treated plant material, etc.

**IMMEDIATELY** after application, drag the soil to remove chisel marks, then firm it with a smooth roller. If additional water is required, add 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 if soil temperature of 80 °F or above, keep soil moist and undisturbed for a minimum of 14 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.

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 50 °F AT 3" DEPTH, horste soil at the end of the fumigation period by cultivation e.g., grading. 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.

Horste until the fumigant has completely escaped from the soil. This is usually accomplished by allowing one week between cultivation and of fumigation period and planting for each 12 gallons per acre of **SN 573**.

FOR SOIL TEMPERATURES BELOW 50 °F AT 3" 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.

**DO NOT RE-USE CONTAINER**

194 E57 vs 13809 01-1

**BEST AVAILABLE COPY**

**BEST COPY AVAILABLE**