



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

January 13, 2020

Maryanne Geisbush  
Agent for General Chemical Company  
c/o Pyxis Regulatory Consulting Inc.  
4110 136th St. Ct. NW  
Gig Harbor, WA 98332

Subject: Notification per PRN 98-10 – Added optional referral statement  
Product Name: ROOTX  
EPA Registration Number: 68464-1  
Application Date: January 4, 2019  
Decision Number: 552267

Dear Ms. Geisbush,

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If you have any questions, please contact Curtis Hildebrandt at 703-347-8198 or by email at [hildebrandt.curtis@epa.gov](mailto:hildebrandt.curtis@epa.gov).

Sincerely,

A handwritten signature in blue ink that reads "Emily Schmid".

Emily Schmid, Product Manager 25  
Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

[Note to reviewer: [Text] in brackets indicates optional text].

**NOTIFICATION**

68464-1

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

1/13/2020

# ROOTX

*Kills Roots in Sanitary and Storm Sewers  
Self Foams on Contact With Water  
Inhibits New Root Growth  
Does Not Contain Copper*

**Active Ingredient:**

Dichlobenil: (2,6 dichlorobenzonitrile)..... 0.55%

**Other Ingredients:** ..... 99.45%

**Total** ..... 100.00%

**Keep Out of Reach of Children**

## CAUTION

~~See [Side] [Back] Panel For Additional Precautionary Statements~~

~~[See] [inside] [label] [booklet] [for] [First Aid][,] [additional] [Precautionary Statements][,] [and] [Directions for Use] [including Storage and Disposal] [instructions][.]~~

**EPA Reg. No. 68464-1  
EPA Est. No. 68464-OR-001**

**General Chemical Co.  
P.O. Box 7626 Salem OR 97303  
1.800.844.4974**

[Optional placement of statement: On Front/Back/Side and or label booklet]

ROOTX contains Dichlobenil which kills the roots and prevents new growth. Dichlobenil is readily absorbed on organic and inorganic colloids of sludge and clay in pipe joints providing residual control of root regrowth by inhibiting the development of actively dividing meristem cells in root tips. New root growths formed outside the pipe joints are retarded or inhibited in growth when they come in contact with Dichlobenil inside the pipe. ROOTX self foams on contact with water. The foam acts as a carrying agent, putting the active ingredient in contact with the tree roots above the flow.

NET WEIGHT \_\_\_\_\_ LBS

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Harmful if swallowed, inhaled or absorbed through skin. Avoid breathing dust.

<b>FIRST AID</b>	
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If inhaled</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency assistance, please call toll free 800/ 858-7378.	

**NOTE TO PHYSICIAN**

Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

**Personal Protective Equipment (PPE):**-Applicators and other handlers, including mixers and loaders, must wear long-sleeved shirt, long pants, shoes plus socks and chemical-resistant gloves. Mixers and loaders must also wear a chemical-resistant apron. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### **User Safety Recommendations**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Environmental Hazards:** For terrestrial uses, do not use near a well or where drinking water is stored. Do not apply directly to open water or to areas where surface water is present or to inter tidal areas below the mean high water mark. Do not contaminate water when disposing of equipment, wash water or rinsate. This chemical has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow may result in ground-water contamination.

#### **Directions For Use**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read the following directions for use thoroughly before application.

***[THE FOLLOWING STORAGE AND DISPOSAL LANGUAGE WILL APPEAR ON 1 POUND CONTAINERS:]***

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage and disposal.

**Pesticide Storage:** Store in a dry place. Avoid storage near food or feed products.

**Pesticide Disposal and Container Handling:** Nonrefillable container. Do not reuse or refill this container. **If empty:** Place in trash or offer for recycling, if available.

**If partially filled:** Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

***[THE FOLLOWING STORAGE AND DISPOSAL LANGUAGE WILL APPEAR ON 2 AND 4 POUND RIGID CONTAINERS:]***

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage and disposal.

**Pesticide Storage:** Store in a dry place. Avoid storage near food or feed products.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:** Nonrefillable container. Do not reuse or refill this container.

Completely empty container by shaking and tapping the sides and bottom to loosen clinging particles. Empty residue into application site, triple rinse with a small amount of water to reduce foaming. Pour rinsate into application site. If empty, place in trash or offer for recycling, if available. If partially filled, call your local solid waste agency for disposal instructions.

***[THE FOLLOWING STORAGE AND DISPOSAL LANGUAGE WILL APPEAR ON 20 POUND BAGS:]***

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage and disposal.

**Pesticide Storage:** Store in a dry place. Avoid storage near food or feed products.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:** Nonrefillable container. Do not reuse or refill this container.

Completely empty bag by shaking and tapping the sides and bottom to loosen clinging particles. Then dispose of bag in a sanitary landfill, or by incineration, if permitted by State and local authorities.

***[THE FOLLOWING DIRECTIONS FOR USE WILL APPEAR ON 1 POUND CONTAINERS:]***

**NOT FOR USE IN SEPTIC SYSTEMS IN THE STATE OF FLORIDA**

Do not apply this product in a way that will contact any person or pet, either directly or through drift. Keep people and pets out of area during application.

**Application Method for Sewer Lines that have Root Problems:**

***Residential 4" sewer lines, utilize a 1 lb. container:*** ADD ENTIRE CONTENTS of a 1 lb. container to toilet bowl. Flush immediately to avoid foam overflowing bowl. Flush a second time to push foam completely into sewer line, and a third time if you have a 1.6 gallon low flow toilet. Restrict water usage from four to six hours. Do not apply through sink or tub.

***[OPTIONAL: THE FOLLOWING TWO PARAGRAPHS MAY APPEAR ON 1 POUND CONTAINERS SOLD AT RETAIL LOCATIONS FOR RESIDENTIAL-USE:]***

**[Application Method for Root Control Along Sidewalks and Driveways:**

To inhibit the entry of roots beneath pavement structures and the resulting damage caused by root growth, cut a 3" or deeper edging along the structure and pour 2 oz. per foot of ROOTX into it in a thin strip. Then cover the edged area with soil. Immediately following application, thoroughly water-in ROOTX. Repeat annually to prevent root growth near the surface along sidewalks and driveways. Do not enter or allow workers to enter the treated area until ROOTX is thoroughly watered in and the treated soil has dried.]

**[Application Method for Root Control In Between Tree Roots and Sewer Lines:**

To prevent long term root growth from the tree to sewer lines, bore a series of small holes, 2 feet apart, into the ground near the offending tree or outside the sewer joints using water or mechanical boring equipment. Add 4 oz. of ROOTX per hole and fill with soil. Be sure that the holes location and depth is directly between the offending tree and sewer line. Immediately following application, thoroughly water in ROOTX. Repeat annually to prevent root growth in between tree roots and sewer lines. Do not enter or allow workers to enter the treated area until ROOTX is thoroughly watered in and the treated soil has dried.]

***[ONE OR BOTH OF THE FOLLOWING USE DIRECTIONS WILL APPEAR ON 2 POUND CONTAINERS:]***

NOT FOR USE IN SEPTIC SYSTEMS IN THE STATE OF FLORIDA

***[OPTIONAL: APPLICATION METHOD FOR CONTAINERS WITHOUT FUNNEL APPLICATOR HEAD]***

**Application Method for Sewer Lines that Have Root Problems:**

***Residential 4" sewer lines up to 50 ft. utilize a 2 lb. container.*** Add entire dry contents of a 2 lb. container into a pail or bucket and mix the two components that were in the container thoroughly. Do not add any water or liquid to the mixture. A proper mixture has been achieved when both chemicals A (white) and B (brown) form a tan mixture of white and brown chemicals. This process should take approximately two minutes. Then slowly pour the ROOTX mixture into the toilet bowl or a sewer clean out if available. When applying into the toilet, make sure to flush immediately after emptying the contents into the bowl. This will help avoid the foam overflowing the bowl. Make sure that when you are pouring the chemical into the application site you do not create a splash which could come in contact with user's eyes. When applying into a sewer clean out, flush the toilet one time *[Optional Statement: or up to 6 times for 1.6 gallon low flow toilets]*, or add 5-10 gallons of water behind it to push the foam completely through the sewer line. Restrict water usage from four to six hours after application.

***[OPTIONAL: APPLICATION METHOD FOR CONTAINERS WITH FUNNEL APPLICATOR HEAD]***

**Application Method for square containers with mixing Funnel/Applicator in Sewer Lines that Have Root Problems:**

***Residential 4" sewer lines up to 50 ft. utilize a 2 lb. container.*** Unscrew lid from top of container. Take the mixing funnel/applicator and put the wide threaded end into the opening where the lid was in the square container. Rotate the mixing funnel/applicator clockwise screwing the mixing funnel into the square container so that it fits tightly. Grasping the bottom of the square container and the narrow end of the mixing funnel applicator, (putting a hand over the mixing funnel/applicator cap which is located at the narrow end of the mixing funnel/applicator), rock the square container with the mixing/funnel applicator attached back and forth for approximately one minute allowing the two dry components of ROOTX to go in to the funnel and then back into the square container several times. After the one minute mixing process you may then take the cap off the narrow end of the mixing/funnel applicator and pour the entire 2 lbs. of the dry product mixture through the mixing funnel/applicator directly into a sewer cleanout or toilet bowl if a sewer cleanout is not available. (Put no more than 2 lbs. of ROOTX in a toilet bowl to minimize the possibility of foam overflow.) When applying into a sewer clean out, flush the toilet two times *[Optional Statement: or up to 6 times for 1.6 gallon low flow toilets]*, or add 5-10 gallons of water into the cleanout to push the foam completely through the sewer line. When applying into the toilet make sure to flush the toilet and add the dry mixture into the toilet bowl as the water is going down the drain. It



is suggested that when doing a toilet application, that you have a 5 gallon bucket filled with water readily available to further push the foam down the toilet drain if the foam comes back up the drain. This will help avoid the foam overflowing the bowl. Restrict water usage from four to six hours after application.]

***[THE FOLLOWING DIRECTIONS FOR USE WILL APPEAR ON 4 POUND CONTAINERS:]***

NOT FOR USE IN SEPTIC SYSTEMS IN THE STATE OF FLORIDA

***[OPTIONAL: APPLICATION METHOD FOR CONTAINERS WITHOUT FUNNEL APPLICATOR HEAD]***

**Application Method for Sewer Lines that Have Root Problems:**

***Residential 4" sewer lines up to 100 ft. or 6" sewer lines up to 75 ft. utilize a 4 lb. container.*** Add entire dry contents of a 4 lb. container into a pail or bucket and mix the two components that were in the container thoroughly. Do not add any water or liquid to the mixture. A proper mixture has been achieved when both chemicals A (white) and B (brown) form a tan mixture of white and brown chemicals. This process should take approximately two minutes. Then slowly pour the ROOTX mixture into the sewer clean out. Make sure that when you are pouring the chemical into the application site you do not create a splash which could come into contact with the user's eyes. Add 5-10 gallons of water behind it to push the foam completely through the sewer line. Do not apply a 4 lb. container through a toilet because of the probability of a foam overflow. Restrict water usage from four to six hours after application.

***[OPTIONAL: THE FOLLOWING MAY APPEAR ON 4 POUND CONTAINERS:]***

**[Application Method for Root Control Along Sidewalks and Driveways:**

Follow mixing directions immediately above. To inhibit the entry of roots beneath pavement structures and the resulting damage caused by root growth, cut a 3" or deeper edging along the structure and pour 2 oz. per foot of ROOTX into it in a thin strip. Then cover the edged area with soil. Immediately following application, thoroughly water-in ROOTX. Repeat annually to prevent root growth near the surface along sidewalks and driveways. Do not enter or allow workers to enter the treated area until ROOTX is thoroughly watered in and the treated soil has dried.]

**[Application Method for Root Control In Between Tree Roots and Sewer Lines:**

Follow mixing directions immediately above. To prevent long term root growth from the tree to sewer lines, bore a series of small holes, 2 feet apart, into the ground near the offending tree or outside the sewer joints using water or mechanical boring equipment. Add 4 oz. of ROOTX per hole and fill with soil. Be sure that the holes location and depth is directly between the offending tree and sewer line. Immediately following application, thoroughly water in ROOTX. Repeat annually to prevent root growth in between tree roots and sewer lines. Do not enter or allow workers to enter the treated area until ROOTX is thoroughly watered in and the treated soil has dried.]

***[OPTIONAL: APPLICATION METHOD FOR CONTAINERS WITH FUNNEL APPLICATOR HEAD]***

**[Application Method for square containers with mixing Funnel/Applicator in Sewer Lines that Have Root Problems:**

***Residential 4" sewer lines up to 100 ft. or 6" sewer lines up to 75 ft. utilize a 4 lb. container. 4 lbs. of ROOTX must be applied only through sewer cleanout. Do not apply 4 lbs. of ROOTX through toilet.***

Unscrew lid from top of container. Take the mixing funnel/applicator and put the wide threaded end into the opening where the lid was in the square container. Rotate the mixing funnel/applicator clockwise screwing the mixing funnel into the square container so that it fits tightly. Grasping the bottom of the square container and the narrow end of the mixing funnel applicator, (putting a hand over the mixing funnel/applicator cap which is located at the narrow end of the mixing funnel/applicator), rock the square container with the mixing/funnel applicator attached back and forth for approximately one minute allowing the two dry components of ROOTX to go in to the funnel and then back into the square container several times. After the one minute mixing process you may then take the cap off the narrow end of the mixing/funnel applicator and pour the entire 4 lbs. of the dry product mixture through the mixing funnel/applicator directly into a sewer cleanout (NOTE: Apply only the 2 lb. container of ROOTX into a toilet bowl to avoid foam overflow.) When applying into a sewer clean out, flush the toilet two times *[Optional Statement: or up to 6 times for 1.6 gallon low flow toilets]*, or add 5-10 gallons of water into the cleanout to push the foam completely through the sewer line. Restrict water usage from four to six hours after application.]

***[EITHER THE FDU 100 OR FDU 300 DIRECTIONS FOR USE WILL APPEAR ON 20 POUND BAGS:]***

NOT FOR USE IN SEPTIC SYSTEMS IN THE STATE OF FLORIDA

**Directions for FDU 100 Method**

**1. Preparing for Application** After determining the correct Orifice size for the FDU 100, take the FDU 100 along with the ROOTX to the upstream manhole, where the ROOTX application will begin. Place the cleaner hose with cleaner nozzle into downstream manhole, as in normal operation, and send the hose with nozzle to the upstream manhole where the ROOTX application will begin. Once the cleaner hose has reached the upstream manhole, pull the hose out of the manhole and lay it on top of the ground.

You should now have your cleaner hose, ROOTX bags, FDU 100 with Foam Dispersal Nozzle, Plastic Locking Pin, Transfer Tube and Rubber O-Rings at the upstream manhole where the ROOTX application will begin.

***Suggestions:*** To prevent having to enter a manhole to retrieve the cleaner hose, it is recommended that a Single Wire Hydraulic hose, 15-20 feet in length, 3/4" or 1" in diameter, be used as a leader hose which can then be attached to the cleaner hose. Attach the cleaner nozzle to the leader hose and send it to the upstream manhole, use a long pole with a hook on the end to pull the leader hose out of the manhole. This makes retrieval of

the cleaner hose much easier and does not require that someone enter the manhole to retrieve the hose. Another suggestion is that the cleaner operator introduces slack in the cleaner hose, which will make it easier to retrieve at the upstream manhole.

**2. Mixing the ROOTX** Open the ROOTX box which contains two 20# bags of ROOTX. The FDU 100 is designed to hold one 20# bag of ROOTX which is sufficient to treat up to 400 ft. of 6-18" pipe. Take one ROOTX bag and remove the plastic tie in the middle of the bag which separates the two dry components, the white chemical A and the brown chemical B. Be careful not to puncture or tear the bag during this process. After you have removed the plastic tie, grab each end of the bag and begin to mix the chemicals by shaking the bag vigorously from the side to side. A proper mixture has been achieved when both chemicals A and B form a tan mixture of white and brown chemicals. This process should take approximately two minutes.

*WARNING: A carbon dioxide (CO<sub>2</sub>) buildup will occur during the mixing process. In the event that the bag should become so full of CO<sub>2</sub> gas that it may break, open a small hole in the end of the bag to release the gas, then continue the mixing process until you achieve a proper mixture.*

**3. Attaching the Transfer Tube** After a proper mixture has been achieved, open the end of the narrow part of the bag with either scissors or a knife. Open just the end where the bag has been sealed. Take the Transfer Tube which has a single groove at one end and two grooves at the other end, and insert it into the opening you have created, single groove end first. Then place the rubber O-rings over the bag and into the grooves which the bag material is covering, leaving one groove exposed and uncovered on the outside of the bag. The exposed groove will be used in locking the Transfer Tube into the FDU 100.

**4. Putting ROOTX into the FDU 100** You should now have a bag with the ROOTX mixed to form a tan color and a Transfer Tube attached to the narrow end of the chemical bag. Take the Transfer Tube and slip it into the FDU 100 where the Foam Dispersal Nozzle fits. Take the plastic locking pin and insert it into the locking hole. Push the Plastic Locking Pin in as far as it will go. Lift the bag slowly, letting the ROOTX flow through the Transfer Tube into the FDU 100. Tap both the ROOTX bag and the FDU 100 occasionally to make sure you have proper flow and that the product is settling into the FDU 100. After completion of the transfer of ROOTX to the FDU 100, pull out the Plastic Locking Pin and remove the Transfer Tube from the FDU 100. Then insert the Foam Dispersal Nozzle into the FDU 100 and lock it into place with the Plastic Locking Pin. Remove the rubber O-rings from the Transfer Tube out of the narrow end of the bag. Be sure to save your Transfer Tube and rubber O-rings for future applications.

**5. Application** The FDU 100 should now be filled with 20 pounds of ROOTX. Attach the cleaner hose to the Inlet End Cap of the FDU 100. Slowly reel in the cleaner hose while lowering the FDU 100 into the manhole. Suggestion: Attaching a string to the Foam Dispersal Nozzle end of the FDU 100 will enable the worker at the upstream manhole to lower the FDU 100 into the hole, while the cleaner operator is pulling the cleaner hose back slowly, without entry, while the operator is slowly retrieving the cleaner hose. The string should be attached in such a manner that it will not hang up in the pipe during the foam spray application. Once the FDU 100 is placed in the hole, the cleaner operator

should be signaled to start the water, and only run the cleaner at an engine idle speed. The worker at the upstream manhole should verify that foam is emitting from the nozzle. Once the foam dispersal has been verified, the FDU 100 should be pulled through the pipe at a speed no greater than 20 feet per minute.

The nozzle of the FDU 100 should always be out of the water during the application of ROOTX. This will insure that the product is properly dispersed onto the roots. In situations where a high flow is present, it is suggested that the flow be bypassed to keep the nozzle from being submerged or to place the FDU 100 on a skid which will lift the nozzle above the flow level. (The skid would be similar to what is used for a camera or cleaning nozzle).

**6. Finished Application** The ROOTX application is finished when the FDU 100 reaches the downstream manhole. The cleaner is now turned off and the FDU 100 is retrieved from the downstream manhole. Smaller size pipe requires gently shaking and pulling by the operator at ground level, in order to retrieve the applicator. After the FDU 100 is removed, unhook the cleaner hose and detach the Foam Dispersal Nozzle. Then wash out any excess ROOTX with a hose, making sure that the wash water goes directly into the sewer through the open manhole. You are now ready for another application.

## **Directions for FDU 300 Method**

**1. Preparing for Application:** After determining the correct Orifice size for the FDU 300, take the FDU 300 along with the ROOTX to the upstream manhole, where the ROOTX application will begin. Use a jetting skid or cage with the jetter nozzle with a diameter of at least 4 inches to verify no offsets or protruding taps that may cause the FDU 300 to get caught on the way back. Place the cleaner hose with cleaner nozzle into downstream manhole, as in normal operation, and send the hose with nozzle to the upstream manhole where the ROOTX application will begin. Once the cleaner hose has reached the upstream manhole, pull the hose out of the manhole using either a rope or poles with grabbers and hooks. Lay the jetter hose on the ground and remove the jetter nozzle and attach the ROOTX leader hose. Remove the nozzle from the applicator by using a motion of pressing it down into the applicator and giving it a 1/3 counter clockwise turn and pull it straight out. Then place the applicator into the FDU loading tripod over a manhole.

**Suggestions:** To prevent having to enter a manhole to retrieve the cleaner hose, it is recommended that a Single Wire Hydraulic hose, 15-20 feet in length, 3/4" or 1" in diameter, be used as a leader hose which can then be attached to the cleaner hose. Attach the cleaner nozzle to the leader hose and send it to the upstream manhole, use a long pole with a hook on the end to pull the leader hose out of the manhole. This makes retrieval of the cleaner hose much easier and does not require that someone enter the manhole to retrieve the hose. Another suggestion is that the cleaner operator introduces slack in the cleaner hose, which will make it easier to retrieve at the upstream manhole.

**2. Mixing the ROOTX:** Open the ROOTX box which contains two 20# bags of ROOTX. The FDU 300 is designed to hold one 20# bag of ROOTX which is sufficient to treat up to 400 ft. of 8-24" pipe. Take one ROOTX bag and remove the thumb release cable tie in the middle of the bag which separates the two dry components, the white chemical A and the

brown chemical B. Be careful not to puncture or tear the bag during this process. After you have removed the plastic tie, grab each end of the bag and pour back and forth until the two separate components are mixed thoroughly (approximately 1 minute). A proper mixture has been achieved when both chemicals A and B form a tan mixture of white and brown chemicals. This process should take approximately two minutes.

*WARNING: A carbon dioxide (CO<sub>2</sub>) buildup will occur during the mixing process. In the event that the bag should become so full of CO<sub>2</sub> gas that it may break, open a small hole in the end of the bag to release the gas, then continue the mixing process until you achieve a proper mixture.*

**3. Attaching the Transfer Tube:** After a proper mixture has been achieved, open the end of the narrow part of the bag with either scissors or a knife. Open just the end where the bag has been sealed. Using the white transfer tube, insert it into the bag leaving the narrow end of the transfer tube sticking out. Fold over the excess bag around the transfer tube and secure using the snap ring supplied. Make sure the snap ring is placed all the way to the top of the transfer tube so that none of the ROOTX chemical can get caught around the lip of the transfer tube when filling the FDU 300 applicator. Verify the snap ring is tight and that the bag of ROOTX chemical cannot come off.

**4. Putting ROOTX into the FDU 300:** While securely holding the 20 lb bag of ROOTX chemical with transfer tube attached, lock the transfer tube into the FDU 300 that has already been placed into the loading tripod. To lock the transfer tube in place, press the transfer tube into the FDU 300 opening and use a one-third clockwise turn to lock the transfer tube into place. Verify that the transfer tube is locked by pulling up on it.

Proceed to pour the 20 lb bag of ROOTX chemical into the FDU 300. You may need to shake or tap the FDU 300 to assist getting the entire 20 lb bag of ROOTX chemical to go completely into the FDU 300. Once finished, tap the side of the transfer tube a couple of times to get any remaining ROOTX chemical in it to fall into the applicator.

Remove the transfer tube from the FDU 300 by pressing down and turning the transfer tube one-third of a turn in the counter clockwise direction and then lift off.

Remove the empty ROOTX chemical bag from the transfer tube and discard the empty chemical bag according to container disposal instructions on this label. Keep the transfer tube and snap ring for the next ROOTX application.

**5. Application:** Attach the FDU 300 spray nozzle back on to the applicator by inserting the nozzle into the applicator and pressing down fully and use a one-third clockwise turn to lock it into place. There are arrows imprinted onto both the nozzle and the applicator that should align when both pieces are safely locked. Test to make sure that the nozzle is locked on by pulling on it to verify it is secured and will not come off.

Remove the entire FDU 300 from the loading tripod and place onto the ground.

Attach the leader hose (previously attached to the jetter truck hose) to the FDU 300 applicator and use wrenches to secure (**Do not hand tighten only**). The FDU 300 applicator must be tightened down to prevent any leaking at the hose connection which could hinder the ROOTX chemical application process.

Using the supplied rope and hook, run the hook up through the FDU nozzle eyelet so the applicator can be lowered into the manhole and then drop the hook out of the eyelet when the FDU applicator is in position at the bottom of the manhole.

Have the jetter truck operator slowly reel back the jetter hose (**no water**) at the downstream manhole while the operator at the upstream manhole lowers the FDU 300 into the upstream manhole with the rope and hook.

Once the FDU 300 is lowered into the bottom of the manhole, signal the jetter truck operator to stop reeling in the hose. Lower the hook and rope off of the FDU 300 and remove them from the manhole. Signal the jetter truck operator to start the water at the truck running the water pressure at idle.

Verify that the applicator is spraying properly and signal the jetter truck operator to start the pull back of the jetter hose while continuing to run the water pressure at idle.

A 20 lb bag of ROOTX chemical will take approximately 10 minutes to apply.

Application Rates with 20 lb's of ROOTX:

400 foot line = 1.3 feet every 2 seconds

300 foot line = 1.0 foot every 2 seconds

**6. Finished Application:** Once you have reached the downstream manhole with the applicator, continue to run the applicator for an additional 30-60 seconds to flush out any remaining ROOTX chemical.

Turn off the water and allow the water and pressure to drain out of the applicator while still sitting at the bottom of the manhole (approximately 1 minute).

At this point begin retrieval of the FDU 300 out of the manhole by slowly shaking the hose back and forth to work the applicator out of the sewer line. You can also use any long polls that you may have to gently work the applicator out of the line. **Do not use the hydraulic hose reel to forcibly pull the FDU 300 applicator out of the manhole, this can result in damaging the applicator.**

Once the FDU 300 applicator is out of the manhole, lay the applicator out straight on the ground with the spray head over the open manhole. Verify the applicator has no excessive pressure built up inside of it. If there is excessive pressure, locate the pressure relief pull cable on the water inlet side of the applicator. While aiming the pressure relief away from yourself, pull the cable to relieve any excess gas pressure remaining inside the applicator.

Now safely remove the jetting/spray nozzle. Once again use a push in and turn counterclockwise motion to unlock the nozzle. Be careful to not drop the spray head back into the manhole.

Once the nozzle is removed, turn the water back on at idle and begin to flush the FDU 300 applicator letting the rinse water run back down into the manhole.

Once the FDU 300 applicator is completely rinsed out, turn off the water, disconnect the jetter hose and leader hose and hang the applicator upside down in the manhole and shake the applicator to drain out any excess water. Turn the applicator around and shake out any remaining water on the inlet side of the applicator.

Once the FDU 300 applicator has drained thoroughly you are now ready for the next ROOTX application.

## **Direct Application Method**

ROOTX is a very flexible product, not only can it be applied in conjunction with a Jetter Truck, but it can also be applied by pouring the ROOTX directly into the sewer or storm line.

1. A 40# ROOTX box contains two 20# bags of pre-packaged chemical. Each 20# bag contains the two components which make up ROOTX. These two components are

separated by a center tie.

2. ROOTX is a two component chemical. Mix both components so that proper foaming action is created. This can be done by releasing the center tie which separates the two components and shaking the bag back and forth until the brown and white components are thoroughly mixed.

3. To effectively treat 300 ft. of 8-10 inch line, you must pour 40 pounds of the ROOTX directly into the manhole. Then follow with 25-30 gallons of water to create the foaming action. The foam will move down the line with the flow, leaving a residue throughout the pipe and coating the roots with the root killing chemical.

***[EITHER THE FDU 100 OR FDU 300 DIRECTIONS FOR USE WILL APPEAR ON 20 POUND BAGS:]***

### **FDU 100 Storm Line Application**

ROOTX may be applied in a storm line by utilizing the FDU 100 method described above. In pipe size larger than 18" or in high flow situations the FDU 100 should be placed on a skid similar to what is used for a camera or cleaning nozzle. This will insure that a sufficient amount of chemical is getting on the roots.

ROOTX may also be applied in storm lines by the Direct Application Method described above. Utilize the following rates for pipe size larger than 10":

4-40# Boxes per 12" x 300'  
6-40# Boxes per 16" x 300'  
8-40# Boxes per 20" x 300'  
10-40# Boxes per 24" x 300'  
12-40# Boxes per 36" x 300'

### **FDU 300 Storm Line Application**

ROOTX may be applied in a storm line by utilizing the FDU 300 method described above. In pipe size larger than 24" or in high flow situations the FDU 300 should be placed on a skid similar to what is used for a camera or cleaning nozzle. This will insure that a sufficient amount of chemical is getting on the roots.

ROOTX may also be applied in storm lines by the Direct Application Method described above. Utilize the following rates for pipe size larger than 10":

4-40# Boxes per 12" x 300'  
6-40# Boxes per 16" x 300'  
8-40# Boxes per 20" x 300'  
10-40# Boxes per 24" x 300'  
12-40# Boxes per 36" x 300'

***[THE FOLLOWING WARRANTY LANGUAGE WILL APPEAR ON ALL CONTAINERS]***

**NOTICE:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER WILL NOT BE LIABLE FOR ANY LOSS, INJURY OR DAMAGES AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, PURCHASERS AND/OR USERS OF THIS PRODUCT HEREBY WAIVE ANY STRICT LIABILITY. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR THE PARTICULAR PURPOSE, AND THERE ARE NO OTHER IMPLIED WARRANTIES, EXCEPT AS SPECIFICALLY SET FORTH ON THIS LABEL. MANUFACTURER'S OBLIGATION ON ANY CLAIM IS LIMITED TO REPLACEMENT OF ANY DEFECTIVE PACKAGE OF ROOTX. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER WILL NOT BE LIABLE FOR ANY LOSS, INJURY OR DAMAGES TO PERSONS OR PROPERTY RESULTING FROM FAILURE OR IMPROPER USE OF THE PRODUCT, NOR WILL THE MANUFACTURER BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND SUSTAINED BY THE PURCHASER OR USER OF THIS PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, PURCHASERS AND/OR USERS OF THIS PRODUCT HEREBY WAIVE ANY STRICT LIABILITY OR PRODUCT LIABILITY CLAIM THEY MIGHT HAVE AGAINST THE MANUFACTURER AND/OR SELLER. SELLER AND MANUFACTURER ARE NOT LIABLE FOR ANY USE OF THIS PRODUCT NOT IN COMPLIANCE WITH THE DIRECTIONS ON THIS LABEL.

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