PM 32 748-275 4-22-98 1 of 9

PPG CHLORINATING TABLETS

*** 3" Chlorinating Tablets, N-200**
*** Erodes slowly to deliver long lasting uniform chlorine protection.**
*** Controls bacteria and algae growth.**
***Convenient, easy to use with the PPG Chlorinator N-200.**
*** No build-up of stabilizer (cyanuric acid).**
*** Does not lower pH or destroy total alkalinity.**
*** Colored blue for safety.**
***Controls bacteria and algae.**
*** Does not contain stabilizer.**

*** Convenient, easy to apply using enclosed skimmer dispenser or the Sustain automatic chlorinator.**
*** Use of Sustain skimmer dispenser protects pool equipment when the pump is not running.**
*** One tablet treats 10,000 gallons of water for up to seven days.**

EPA Reg. No. 748-275
EPA Est. No. 2312-PA-1

ACTIVE INGREDIENT: Calcium Hypochlorite. . . 68%
INERT INGREDIENTS: 32%
Minimum 65% Available Chlorine

KEEP OUT OF REACH OF CHILDREN
DANGER

Do not mix with stabilized chlorine tablets which are typically white or other pool chemicals. Do not use with stabilized chlorine or bromine tablet chemical feeders. Mixing could cause a fire or explosion. Use only with other (blue) PPG Chlorinating Tablets. See additional precautionary statements on back label.

STATEMENT OF PRACTICAL TREATMENT (First Aid): **EYE/SKIN CONTACT**: Flush with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. For eye contact, get immediate medical attention. If skin irritation occurs, get medical attention. **INHALATION**: Remove to fresh air. If signs of irritation or discomfort occur, take immediately to a hospital or physician. **SWALLOWING**: If swallowed, drink large amounts of water. Do not induce vomiting. Call a physician or poison control center immediately.

NET WT. 100 lbs. (45 kg)

ACCEPTED
APR 22 1998
For use under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 748-275

L398

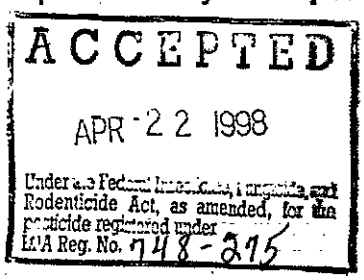
Manufactured by
PPG INDUSTRIES, INC.
One PPG Place
Pittsburgh, PA 15272
Emergency Telephone Number: (304) 843-1300

PRECAUTIONARY STATEMENTS -
HAZARDS TO HUMANS AND DOMESTIC ANIMALS -
DANGER! * Highly Corrosive * Causes Skin and Eye Damage * May be Fatal if Swallowed * Irritating to Nose and Throat * Wear goggles or face shield and rubber gloves when handling. Avoid breathing dust. Remove and wash contaminated clothing and shoes before reuse.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL AND CHEMICAL HAZARDS: Strong oxidizing agent! Mix only with water. Use only a clean, dry utensil made of metal or plastic each time product is taken from the container. **Do not add this product to any dispensing device containing remnants of any other product. Such use may cause violent reaction leading to fire or explosion.** Contamination with moisture, acids, organic matter, other chemicals or easily combustible materials such as petroleum or paint products may start a chemical reaction with generation of heat, liberation of hazardous gases and possible generation of a fire or explosion. In case of contamination or decomposition, do not reseal container. If possible isolate container in open air or well-ventilated area. Flood with large volumes of water, if necessary.

STORAGE AND DISPOSAL: Read before using. Keep in original container in a cool, dry, well-ventilated place. Keep container closed when not in use. Keep away from heat sources, sparks, open flames and lighted tobacco products. Use only a clean, dry utensil made of metal or plastic each time product is taken from the container. **Container Disposal** - Do not reuse container. Residual material remaining in empty container can react to cause fire. Thoroughly flush empty container with water then destroy by placing in trash collection. **Pesticide Disposal** - Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.



Do not contaminate water, food, or feed by storage or disposal. **In Case of Fire** - Drench with water. Calcium hypochlorite supplies oxygen; therefore, attempts to smother fire with a wet blanket, carbon dioxide, or a dry chemical extinguisher are ineffective. **In Case of Spill or Leak** - Use extreme caution. Contamination may cause fire or violent reaction. If fire or reaction occurs in area of spill, douse with plenty of water. Otherwise sweep up spilled material, using a clean, dry shovel and broom and dissolve spilled material in water. Then immediately use solution as directed.

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

How to adjust the PPG Chlorinating Tablets: The *PPG Chlorinating Tablets* are designed to be dispensed using the *PPG Chlorinator.* To decrease tablet deliver rate: Reduce water flow through the chlorinator. To increase tablet delivery rate: Increase water flow through the chlorinator. Do not throw the tablets directly into the pool or allow tablets to contact plastic or steel pool linings.

How to adjust the Chlorinating Tablets: The *Chlorinating Tablets* are designed to be dispensed using the *enclosed skimmer dispenser.* To decrease tablet deliver rate: Close the adjustable dispenser lid to reduce the flow of water to the tablet surface. To increase tablet delivery rate: 1) Fully open or remove adjustable dispenser lid., 2) Use a second skimmer dispenser, if you have space., 3) Increase circulation time., 4) Increase water flow through the skimmer. Do not throw the tablets directly into the pool or allow tablets to contact plastic or steel pool linings.

Regular treatment for pools in use:

Maintain pool parameters in the ranges recommended below or at levels required by local regulations. Obtain and make use of pool test kit to measure pH, free chlorine residual, total alkalinity, water hardness, and cyanuric acid concentration.

Parameters	Test Frequency	Recommended Level
1. pH	Daily	7.2 to 7.6
2. Free chlorine residual	Daily	1-3 ppm
3. Total alkalinity as $CaCO_3$	Weekly	80-100 ppm
4. Stabilizers (cyanuric acid)	Monthly	40-80 ppm
5. Water hardness as $CaCO_3$	Monthly	200 ppm minimum

Initial chlorination:

Begin continuous operation of your recirculation equipment. Balance the water by making certain the pool water parameters for pH, total alkalinity and water hardness are at their proper levels. Check and adjust stabilizer to proper level. Shock treat the pool. Follow label directions of the product used. Repeat the treatment until minimum 1 ppm free chlorine has been established. Do not enter the water until the free chlorine residual is less than 3 ppm. Begin routine chlorination.

Routine chlorination:

Maintain total alkalinity, pH, water hardness and stabilizer concentration at their proper levels.

Fill chlorinator with *PPG Chlorinating Tablets*. Adjust flow control valve to initial setting. Adjust tablet delivery, as needed, to maintain a 1-3 ppm free available chlorine residual. (Refer to The PPG Chlorinator Instruction Manual.) Actual number of *PPG Chlorinating Tablets* and flow adjustments required to maintain the desired free chlorine residual will vary with the amount of pool water, sunlight, water temperature, bather load, stabilizer concentration and other factors. Use a DPD test kit daily to determine and maintain the proper free chlorine residual. Do not use an OTO test kit.

Fill the skimmer dispenser with Chlorinating Tablets, adjust dispenser lid to half open and place the dispenser in the skimmer basket. Adjust tablet delivery, as needed, to maintain a 1-3 ppm free available chlorine residual. Run circulation system at least 12 hours each day. Re-fill skimmer dispenser with Chlorinating Tablets each week. Actual number of *Chlorinating Tablets* and dispenser lid adjustments required to maintain the desired free chlorine residual will vary with the amount of pool water, sunlight, water temperature, bather load, stabilizer concentration and other factors. Use Sustain 3-way test strips or a DPD test kit daily at first and then at least once each week to determine and maintain the proper free chlorine residual. Do not use an OTO test kit.

We recommend you:

Add Sustain Summer Shield, once each summer (150 days) to help chlorine protect your pool from algae growth all season long. Begin weekly additions of Sustain Shield Energizer and Shock Treatment tablets to re-energize the protective Sustain Summer shield and keep your pool water sparking clear.

Helpful aids in swimming pool care:

Maintaining the proper pH, total alkalinity and water hardness is necessary to obtain proper water balance and help avoid problems such as cloudy water, scaling, corrosion and swimmer discomfort. Stabilizers such as cyanuric acid slow down the rate at which chlorine is destroyed by sunlight. Follow carefully the directions given with the product when using a stabilizer. Kits for testing free chlorine, pH, total alkalinity, water hardness, and cyanuric acid concentration are an integral part of a proper program for controlling the quality of your pool water.

How to determine the capacity of your pool:

First: Approximate the average depth in feet by adding the depth at the deep end to the depth at the shallow end and divide the total by two. **Then:** For rectangular or square pools: Multiply length (feet) x width (feet) x average depth (feet) x 7.5 = capacity of pool in gallons. For circular pools: Multiply diameter (feet) x diameter (feet) x average depth (feet) x 5.9 = capacity of pool in gallons. For oval pools: Multiply long axis (feet) x short axis (feet) x average depth (feet) x 5.9 = capacity of pool in gallons. **NOTE:** If pool has sloping sides, multiply total gallons calculated by 0.85 to arrive at the capacity of your pool.

The PPG Chlorinator

NSF Listed

Instruction Manual
Model PPG N-200

A true erosion feeder for uniform chlorine delivery to pool water

- **For use with PPG 3" Tablets**
- **Easy to use**
- **Dependable Operation**
- **Accurate Chlorine Delivery**

The PPG Chlorinator N-200 is an automatic feeder designed to accurately and dependably feed PPG 3" Tablets. The "true erosion feeder" design of the PPG Chlorinator results in accurate chlorine delivery due to the directed flow of water over a constant tablet surface area. The unique and simple design contains no moving parts to wear or break and no small orifices to clog, resulting in extremely dependable and easy operation. The combination of the Feeder design and the patented slow-release characteristics of PPG 3" Tablets enables consistent and uniform chlorine delivery.

DANGER:

DO NOT MIX CHEMICALS!

The PPG Chlorinator N-200 is designed for use with PPG 3" Tablets. Do not use with stabilized chlorine or bromine tablets or other pool chemicals. Fire or explosion could result.

IMPORTANT:

PPG recommends the PPG Chlorinator N-200 be professionally installed.

NOTE:

This device is NSF listed for swimming pools and spas. Maximum delivery 6 lbs. of Calcium Hypochlorite tablets/day. For NSF installation, a flow meter must be installed on the Chlorinator Inlet Line and PPG Chlorinating Tablets N-200 must be used.

Warranty

PPG Industries, Inc. ("PPG") warrants to the original retail purchaser ("the owner") of the PPG Chlorinator (N-200) that the product shall be free of defects in material and workmanship for a period of 6 months from the date of purchase. (Purchaser must be able to prove/establish the date the product was purchased to ensure rights under warranty.) EXCEPT AS SPECIFICALLY PROVIDED HEREIN, THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. THIS WARRANTY DOES NOT PROVIDE FOR, AND PPG SHALL NOT BE LIABLE FOR, THE PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. ALL WARRANTIES WHICH MAY BE IMPLIED BY LAW ARE EXPRESSLY LIMITED TO THE PERIOD OF THIS WARRANTY. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

This warranty provides only for the repair or replacement of the N-200 at PPG's expense. If the N-200 contains a defect or malfunction which, after a reasonable number of attempts, PPG is unable to remedy, PPG shall at PPG's option, refund the purchase price or replace the N-200.

To obtain service on this warranty, please contact the dealer from whom you purchased your N-200. If for any reason you are not completely satisfied with the results, write to: PPG Pool Care Hotline, PPG Industries, Inc., One PPG Place, Pittsburgh, PA 15272.

This warranty shall not apply to (i) any defects, malfunctions or other failures when caused by damage (not resulting from defect or malfunction) while in the possession of the user; (ii) or when unreasonably used (including failure to provide reasonable and necessary maintenance); or (iii) resulting from use in a manner contrary to the instructions accompanying the N-200.

Buyer assumes all risks for use of the N-200 not in strict accordance with the labeling and instructions or due to abnormal or unforeseeable circumstances.

ACCEPTED
APR 22 1998
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 748-275

U.S. Patent Number 5,089,127

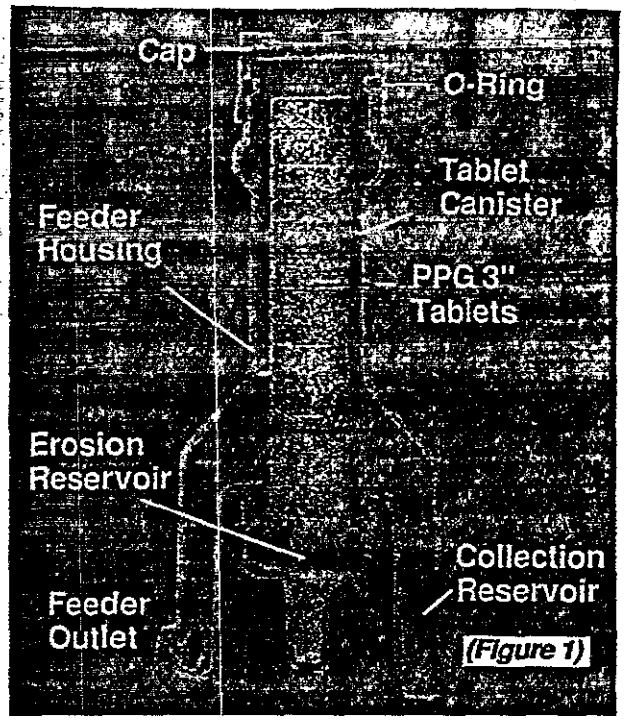
PPG

How it Works

(See Figure 1)

The PPG Chlorinator (Feeder) provides controlled, continuous and uniform feeding of chlorine into pool water. The Feeder's major components and their functions are explained below.

The **Tablet Canister** holds 12 PPG 3" Tablets (8 lbs.). The Tablet Canister slides down into the **Feeder Housing** and hangs from the lip at the top of the Housing, leaving the bottom of the Tablet Canister submerged in water. Openings at the bottom and sides of the Tablet Canister allow pool water to contact the bottom tablets. **The Cap** screws down onto the **O-Ring** to seal the feeder for operation. As water enters the feeder it fills the **Erosion Reservoir**, erodes the bottom tablets and spills over into the **Collection Reservoir** allowing treated water to return to the pool circulation system. As the bottom tablets erode the tablet stack drops down to replace them. The Feeder is not under pressure since it is sealed and returns to the suction side of the pump. This ensures that the feeder will not flood with water and the tablet stack will remain dry until needed. The **Control Valve** adjusts chlorine delivery by changing the flow rate of water entering the feeder to erode the tablets.



(Figure 1)

Positioning and Installation

(See Figure 2)

Please read all instructions before proceeding.

Positioning

The Feeder may be installed above or below the swimming pool water level. The Feeder is designed to take in circulating pool water after it passes through the pump, and return treated water to the suction side of the pump. Install the Feeder Inlet Line at a point after the filter, but before the heater. SLIGHT NEGATIVE PRESSURE (VACUUM) MUST BE PRESENT AT THE PUMP SUCTION FOR PROPER OPERATION.

A. Pre-Installation Instructions:

1. Complete Warranty Card and return to PPG.
2. Unpack: Feeder Housing, Tablet Canister, Cap, Instruction Manual.
3. To proceed you will need the following materials not included with the feeder:

   Silicone Lubricant for the O-Ring PVC primer and solvent cement

   Teflon tape for sealing threaded fittings

   Use PPG Installation Kit IK-I for easier pool installation

   For rigid pipe installation you will also need:

   (2) PVC pipe Tees of your pool piping size

   (1) PVC Shut-off valve for chlorinator return line

   (1) PVC Reducing bushing(s) to 1-1/2" for pipe Tee A

   (1) PVC Reducing bushing(s) to 1/2" for pipe Tee B

   (1) 1-1/2" PVC pipe adaptor for the chlorinator outlet

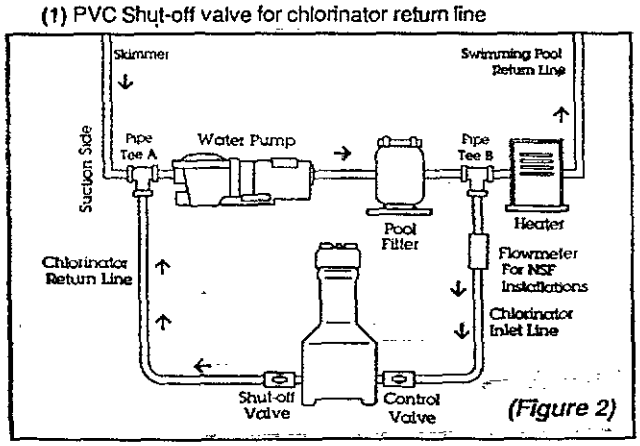
   (*) 1/2" PVC pipe and fittings for chlorinator feed line

   (*) 1-1/2" PVC pipe and fittings for chlorinator return line

   Optional: PVC pipe unions for disconnecting chlorinator for winterizing

   For NSF installation: A flow meter must be installed on the chlorinator inlet line and PPG Chlorinating Tablets N-200 must be used.

   If anchoring the chlorinator housing, you will need four (4) 1/4" x 3" bolts and washers.



(Figure 2)

B. Installation

1. Locate the unit near the pump, where it will be readily accessible to the operator. If you desire, you may anchor the feeder to the ground through the slots in the feet using bolts and washers.
2. Using PVC solvent, cement the 1/2" X 4" long PVC pipe to the 1/2" control valve and into the 1/2" elbow on the chlorinator.
3. Turn off the pump, and stop waterflow from the skimmer and swimming pool return line.
4. Install two Pipe Tees in the circulation system of the swimming pool. Position Pipe Tee A on the suction side of the pump and Pipe Tee B after the filter but before the heater.
5. Install a 1-1/2" Shut-off Valve on the Feeder return line to the suction side of the pump, or connect directly to the chlorinator outlet.
6. Connect the chlorinator outlet to Pipe Tee A and Chlorinator inlet to pipe Tee B.
7. Remove the Cap from the top of the Feeder. Clean and lubricate the O-Ring with silicone lubricant only and place it on top of the Feeder Housing.
8. Replace Cap, and hand tighten to seal the Feeder.
9. Close the Control Valve on the Feeder, and the Shut-off Valve on the Feeder Return Line. The Feeder is now isolated from the circulation system.

10. Restore waterflow through skimmer and swimming pool return lines. Restart the pump.
11. Open the Shut-off Valve on the Feeder return line. (There may be air in the pump strainer pot for a few seconds.)
12. Open the Control Valve on the Feeder. There will now be water moving through the Feeder. Check all fittings for leaks.
13. Installation is now complete.

Operation

Before operating the PPG Chlorinator, properly balance your pool water and establish Free Available Chlorine at 1-3 ppm.

The chlorine demand of your pool varies with factors such as sunlight, bather load, rain, water temperature, etc. As a result, the Control Valve setting on the Chlorinator may have to be adjusted over time to meet changing chlorine demand. Recommended start-up settings for different size pools are listed in the chart below.

Pool Size (Gal.)	Initial Control Valve Settings	Nominal [1] Flow Rate GPM	Tablet [2] Delivery Rate Lb/day
	OFF	0	0.00
28,000	1/8 open	2	1.4
46,000	1/4 open	3	2.3
92,000	1/2 open	4	4.3
120,000	3/4 open	5	6.0

[1] The rate at specific setting will vary depending on pool circulation equipment. [2] Chart represents 24-hour pump operation. For example, with 12-hour pump operation delivery would be half of chart value. A 3/4 open setting would deliver 3.0 lb/day instead of 6.0 lb/day.

Spa Delivery Rate Control Valve Settings	Tablets Delivery Rate Lb/day
1/8 open	1.2
1/4 open	3.3
1/2 open	4.6
3/4 open	6.0

UNDER NORMAL OPERATING CONDITIONS WITH THE PUMP ON, THE INSIDE OF THE FEEDER WILL BE UNDER SLIGHT NEGATIVE PRESSURE. FOR SAFETY THE CHLORINATOR HAS BEEN DESIGNED TO WITHSTAND 30 PSI PRESSURE, BUT THE UNIT SHOULD NOT BE UNDER ANY PRESSURE IF OPERATED ACCORDING TO INSTRUCTIONS. THE FEEDER MUST BE ISOLATED FROM THE CIRCULATION SYSTEM BEFORE THE CAP IS REMOVED. THIS IS ACHIEVED BY CLOSING THE CONTROL VALVE AND SHUT-OFF VALVE IN THE CORRECT ORDER. FOLLOW DIRECTIONS CLOSELY.

To refill the Feeder

1. Verify Shut-off Valve is open and pump is running. Flush the Feeder by opening the Control Valve to full open (setting 5) for 1 minute.
2. Turn the Control Valve to full OFF position.
   Important: Close Control Valve before closing Shut-off Valve to prevent over-pressurization of Feeder.
3. Close the Shut-off Valve on the return line.
4. Remove the Cap. (Be careful not to inhale fumes)
5. Fill the Tablet Canister with 3" Tablets. The tablets should be stacked flat and not on end or sideways (see Figure 1).
6. Replace Cap making sure that the O-Ring is clean and in place. Hand-tighten. Lubricate the O-Ring as needed using silicone lubricant only.

To operate the Feeder

Important: Open Shut-off Valve before opening Control Valve to prevent over-pressurization of feeder.

1. Open the Shut-off Valve on the Feeder return line.
2. Adjust the Control Valve to the desired setting. (Recommended start-up settings for pools of various sizes are listed in the Instruction Manual.) Initially check the Free Available Chlorine daily for the first week to determine the best setting for your pool.
3. Adjust Control Valve and refill Tablet Canister as needed to maintain Free Available Chlorine between 1-3 ppm. Check the Feeder at least weekly to monitor tablet supply and ensure holes in bottom of tablet canister are free of residue.
4. Maintain pH of pool water between 7.2 -7.6.

Cleaning

The PPG Chlorinator should be cleaned at least at the end of every season to remove residue that may accumulate inside the Feeder or hoses. The Tablet Canister may require more frequent cleanings. Cleaning can be accomplished by soaking in a dilute acid solution.

To clean the Feeder while installed:

1. Verify the Shut-off Valve is open and the pump is running.
2. Isolate the Feeder from the pool circulation system by closing first the Control Valve and then the Shut-off Valve.
3. Remove the Cap.
4. Remove all tablets from the Tablet Canister. Rinse the Tablet Canister in water to remove any tablet residue.
5. Rinse the Feeder with water and, with the Cap off, open the Shut-off Valve temporarily to drain the Feeder.
6. Turn off pump.
7. Prepare 2 gallons of dilute acid solution by adding one quart of muriatic acid to 7 quarts of water. (Never add water to acid). Wear rubber gloves, and rinse all equipment thoroughly when finished.
8. Soak the Tablet Canister in the dilute acid to remove scale. Make sure the holes in the bottom of the canister are free of residue. Use a pointed instrument to clear them if necessary. Rinse with water.
9. Carefully pour the dilute acid solution into the Feeder. Replace and hand tighten the Cap. Open the Shut-off Valve. Let soak for 30 minutes.
10. After 30 minutes, turn on the Pump, and with the Shut-off Valve open, adjust the Control Valve to setting 2. Let the feeder flush for 30 minutes.
11. After 30 minutes, first close the Control Valve, then the Shut-off Valve, and remove the Cap. Temporarily open the Shut-off Valve to drain the Feeder. Rinse the Feeder with water and drain again. Cleaning is now complete.
12. Check that the alkalinity of your pool and that the pH is between 7.2-7.6.

Winterizing

To protect the Feeder from freezing temperatures you must:

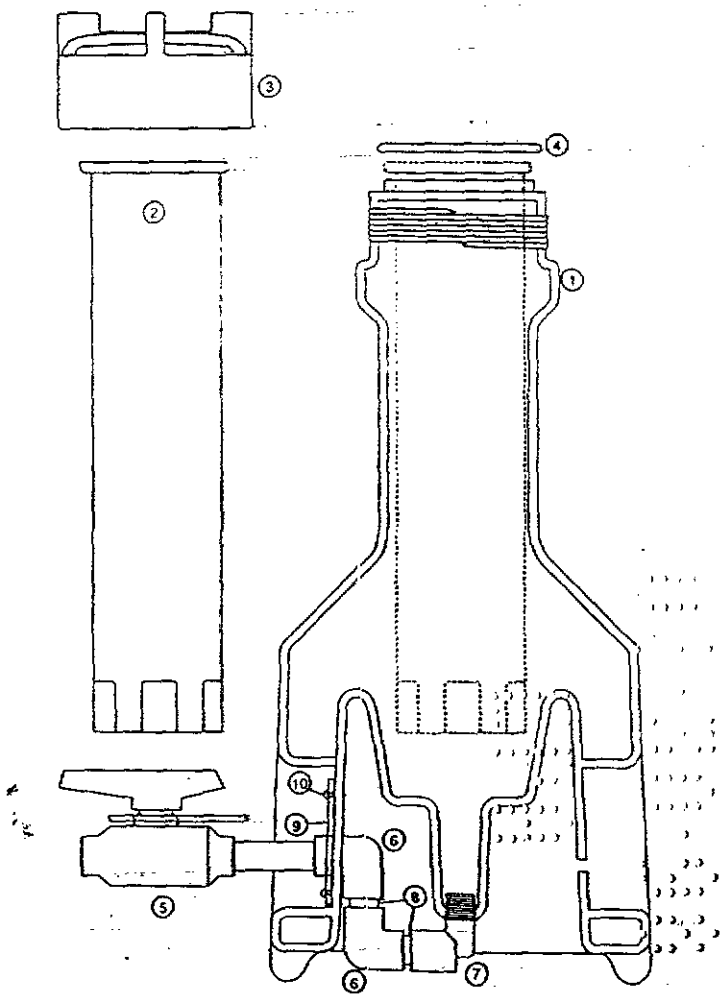
1. Clean the Feeder as per Instruction Manual.
2. As with other pool and spa equipment, all water must be removed to prevent freezing and cracking.
3. Remove water from feeder by either disconnecting feeder or clearing with air.
4. Store unit indoors if possible.

Troubleshooting

Condition	Cause	Solution
Low free chlorine (FAC<1ppm)	A. Feed rate too low	a. Adjust Control Valve to higher setting
	B. Insufficient tablets	b. Refill Tablet Canister with PPG 3" Tablets and check more frequently
	C. Shut-off Valve on return line is closed	c. Open Shut-off Valve to allow flow through Feeder
	D. Filter pressure is high, water flow low	d. Backwash filter
	E. Pump circulation time is insufficient	e. Increase pump circulation time
	F. Tablet Canister holes plugged	f. Physically clear or clean with a dilute acid (see Cleaning)
	G. Plugging of Feeder inlet or outlet	g. Clean Feeder with dilute acid (see Cleaning)
High free chlorine (FAC>3ppm)	A. Feed rate too high	a. Adjust Control Valve to lower setting
Air leaks	A. Outlet connector and fittings not installed properly	a. Tighten or otherwise seal connections
	B. Cap is not sealing	b. Clean and lubricate O-ring. Replace if damaged
Tablets hanging up in Tablet Canister	A. Residue build-up in Tablet Canister	a. Clean Tablet Canister with dilute acid (see Cleaning)
	B. Tablets not stacked flat	b. Restack Tablets (see Figure 1)

PPG Chlorinator N-200

Ref No.	Part	Parts No.
Main Components		
1.	Feeder Housing	PPG N100-1
2.	Tablet Canister	PPG N200-13
3.	Cap	PPG N100-4-1
4.	O-Ring 4.225 ID X 0.210 W Viton	PPG N100-6-1
Fittings and Assembly Components		
5.	Control Valve and Indicator Plate 1/2" S X S PVC	PPG N200-14-2
6.	Elbow (2 required) 1/2" S X S SCH 40 PVC	PPG N200-14-3
7.	Elbow (2 required) 1/2" MPT X S SCH 40 PVC	PPG N200-14-4
8.	Pipe 1/2" SCH 40 PVC	PPG N200-14-5
9.	Pipe Support Plate	PPG N200-14-6
10.	Screws (4 required)	PPG N200-14-7



ACCEPTED

APR 22 1998

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PPG Industries, Inc.
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Pittsburgh, PA 15272
1-800-421-2025

L407M-1092B