US ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES PROGRAMS
REGISTRATION DIVISION (TS-767)
WASHINGTON, DC 20460

NOTICE OF PESTICIDE: [X] REGISTRATION [ ] REREGISTRATION

(Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)

EPA REGISTRATION NO.	DATE OF ISSUANCE
748-295	20 MAY 1993

TERM OF ISSUANCE

NAME OF PESTICIDE PRODUCT

PPG Calcium Hypochlorite Tablets

NAME AND ADDRESS OF REGISTRANT *(Include ZIP code)*

PPG Industries, Inc.
One PPG Place - 36 West
Pittsburgh, PA 15272

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Add the phrase, "EPA Registration No. 748-295" to your label before you release the product for shipment.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

[ ] ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL	DATE

EPA Form 8570-6 (Rev. 5-76) PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

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

Sincerely,

Ruth G. Douglas
Product Manager (32)
Antimicrobial Program Branch
Registration Division (H-7504C)

Enclosures

PPG CALCIUM HYPOCHLORITE TABLETS

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

KEEP OUT OF REACH OF CHILDREN
DANGER

ACTIVE INGREDIENT: Calcium Hypochlorite. . . 65%
INERT INGREDIENTS: 35%
65% Available Chlorine

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with COMMENTS
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Manufactured by
PPG INDUSTRIES, INC.
One PPG Place
Pittsburgh, PA 15272
NET WT. 100 lbs.
Emergency Telephone Number: Natrium, WV (304) 843-1300

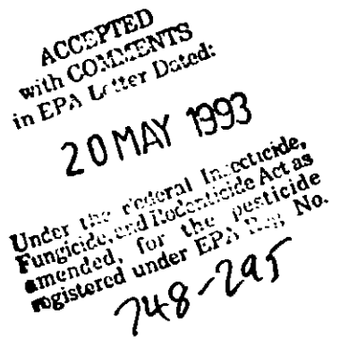
PRECAUTIONARY STATEMENTS -
HAZARDS TO HUMANS AND DOMESTIC ANIMALS -
DANGER! * Highly Corrosive * Causes Skin and Eye Damage * May be Fatal if Swallowed * Irritating to Nose and Throat * Wear goggles or face shield and rubber gloves when handling. Avoid breathing dust. Remove and wash contaminated clothing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

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 quantities of water. Do not induce vomiting. Take immediately to a hospital or physician. If vomiting occurs, administer additional water. If unconscious, or in convulsions, take immediately to a hospital. Do not attempt to induce vomiting or give anything by mouth to an unconscious person.

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 this product is specifically identified and addressed in an NPDES permit. 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.

DISINFECTION OF DRINKING WATER (Potable Water):

PUBLIC SYSTEMS - Mix a ratio of 1 ounce of this product to 6000 gallons of water. Begin feeding this solution with a hypochlorinator until a free available chlorine residual of at least 0.2 ppm and no more than 0.6 ppm is attained throughout the distribution system. Check water frequently with a chlorine test kit. Bacteriological sampling must be conducted at a frequency no less than that prescribed by the National Interim Primary Drinking Water Regulations. Contact your local Health Department for further details.

INDIVIDUAL SYSTEMS - Dug Wells - Upon completion of the casing (lining) wash the interior of the casing (lining) with a 100 ppm available chlorine solution using a stiff brush. This solution can be made by thoroughly mixing 1 ounce of this product into 40 gallons of water. After covering the well, pour the sanitizing solution into the well through both the pipe sleeve opening and the pipeline. Wash the exterior of the pump cylinder also with the sanitizing solution. Start pump and pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Contact your local Health Department for further details.

INDIVIDUAL WATER SYSTEMS - Drilled, Driven & Bored Wells - Run pump until water is a free from turbidity as possible. Pour a 100 ppm available chlorine sanitizing solution into the well. This solution can be made by thoroughly mixing 1 ounce of this product into 40 gallons of water. Add 5 to 10 gallons of clean, chlorinated water to the well in order to force the sanitizer into the rock formation. Wash the exterior of pump cylinder with the sanitizer. Drop pipeline into well, start pump and pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Deep wells with high water levels may necessitate the use of special methods for introduction of the sanitizer into the well. Consult your local Health Department for further details.

INDIVIDUAL WATER SYSTEMS - Flowing Artesian Wells - Artesian wells generally do not require disinfection. If analyses indicate persistent contamination, the well should be disinfected. Consult your local Health Department for further details.

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EMERGENCY DISINFECTION - When boiling of water for 1 minute is not practical, water can be made potable by using this product. Prior to addition of the sanitizer, remove all suspended material by filtration or by allowing it to settle to the bottom. Decant the clarified, contaminated water to a clean container and add 1 grain of this product to 1 gallon of water. One grain is approximately the size of the letter "O" in this sentence. Allow the treated water to stand for 30 minutes. Properly treated water should have a slight chlorine odor, if not, repeat dosage and allow the water to stand an additional 15 minutes. The treated water can then be made palatable by pouring it between clean containers for several times.

SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES

RINSE METHOD - A solution of 100 ppm available chlorine may be used in the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to insure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 1 ounce of this product with 40 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 1 ounce of this product with 20 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. If solution contains less than 50 ppm available chlorine, as determined by a suitable test kit, either discard the solution or add sufficient product to reestablish a 200 ppm residual. Do not rinse equipment with water after treatment and do not soak equipment overnight. Sanitizers used in automated systems may be used for general cleaning but may not be reused for sanitizing purposes.

IMMERSION METHOD - A solution of 100 ppm available chlorine may be used in the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to insure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 1 ounce of this product with 40 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 1 ounce of this product with 20 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. If solution contains less than 50 ppm available chlorine, as determined by a suitable test kit, either discard the solution or add sufficient product to reestablish a 200 ppm residual. do not rinse equipment with water after treatment. Sanitizers used in automated systems may be used for general cleaning but may not be reused for sanitizing purposes.

- FLOW/PRESSURE METHOD - Disassemble equipment and thoroughly clean after use. Assemble equipment in operating position prior to use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 1 ounce product with 20 gallons of water. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 2 minutes to insure contact with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine. ~~Rinse system with potable water prior to use.~~

- CLEAN-IN-PLACE METHOD - Thoroughly clean equipment after use. Prepare a volume of 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 1 ounce product with 20 gallons of water. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 10 minutes to insure contact with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine. ~~Rinse system with potable water prior to use~~.

SPRAY/FOG METHOD - Preclean all surfaces after use. Use a 200 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. Prepare a 200 ppm sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 1 ounce product with 20 gallons of water. Prepare a 600 ppm solution by thoroughly mixing the product in a ratio of 3 ounces product with 20 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces treated with a 600 ppm solution with a 200 ppm solution.

ACCEPTED with COMMENTS In Letter Dated: 20 MAY 1993 Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended for the pesticide registered under EPA Reg. No. 748-295

SANITIZATION OF POROUS FOOD CONTACT SURFACES

- RINSE METHOD - Prepare a ~~sanitizing~~ 600 ppm solution by thoroughly mixing 3 ounces of this product with 20 gallons of water ~~to provide approximately 600 ppm available chlorine by weight~~. Clean surfaces in the normal manner. ~~Prior to use~~, rinse all surfaces thoroughly with the ~~sanitizing~~ 600 ppm solution, maintaining contact ~~with the sanitizer~~ for at least 2 minutes. ~~Rinse equipment with water after treatment~~ and do not soak equipment overnight.

Prepare a 200 ppm sanitizing solution by thoroughly mixing 1 ounce of this product with 20 gallons of water. Prior to using equipment, rinse all surfaces with a 200 ppm available chlorine solution. Do not rinse

Prepare a 200 ppm sanitizing solution by thoroughly mixing 2 ounces of this product with 10 gallons of water. Prior to using,

IMMERSION METHOD - Prepare a ~~sanitizing~~ 600 ppm solution by thoroughly mixing, in an immersion tank, 3 ounces of this product with 20 gallons of water. ~~to provide approximately 600 ppm available chlorine by weight.~~ Clean equipment in the normal manner. ~~Prior to use~~, immerse equipment in the 600 ppm sanitizing solution for at least 2 minutes and allow the sanitizer to drain. ~~Rinse equipment with water after treatment.~~ Do not rinse and do not soak equipment overnight.

SPRAY/FOG METHOD - Preclean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 3 ounces product with 20 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces with a 200 ppm available chlorine solution. Prepare a 200 ppm sanitizing solution by thoroughly mixing 1 ounce of this product with 20 gallons of water.

SANITIZATION OF NONPOROUS NON-FOOD CONTACT SURFACES

RINSE METHOD - Prepare a sanitizing solution by thoroughly mixing 1 ounce of this product with 20 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

IMMERSION METHOD - Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 1 ounce of this product with 20 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

SPRAY/FOG METHOD - Preclean all surfaces after use. Prepare a 200 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 1 ounce product with 20 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

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BEST AVAILABLE COPY

DISINFECTION OF NONPOROUS NON-FOOD CONTACT SURFACES

RINSE METHOD - Prepare a disinfecting solution by thoroughly mixing 3 ounces of this product with 20 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the disinfecting solution, maintaining contact with the solution for at least 10 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

IMMERSION METHOD - Prepare a disinfecting solution by thoroughly mixing, in an immersion tank, 3 ounces of this product with 20 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the disinfecting solution for at least 10 minutes and allow the solution to drain. Do not rinse equipment with water after treatment.

ACCEPTED with COMMENTS in EPA Letter Dated: 20 MAY 1993

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended for the pesticide registered under EPA Reg. No. 748-245

SANITIZATION OF POROUS NON-FOOD CONTACT SURFACES

RINSE METHOD - Prepare a sanitizing solution by thoroughly mixing 3 ounces of this product with 20 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, rinse all surfaces thoroughly with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

IMMERSION METHOD - Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 3 ounces of this product with 20 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

SPRAY/FOG METHOD - After cleaning, sanitize non-food contact surfaces with 600 ppm available chlorine by thoroughly mixing the product in a ratio of 3 ounces of this product with 20 gallons of water. Use spray or fogging equipment which can resist hypochlorite solutions. Always empty and rinse spray/fog equipment with potable water after use. Prior to using equipment, thoroughly spray or fog all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

OTHER CALCIUM HYPOCHLORITE USES: Calcium Hypochlorite is also used in the sanitization of water systems, municipal water mains, sewage and industrial waste treatment, pulp bleaching, sanitization in the food industry, restaurants, dairies, and hospitals, odor and taste control in potable water systems, algae control in industrial cooling water systems, and general industrial sanitization. For specific literature on these and other accepted uses, write to PPG INDUSTRIES, INC., One PPG Place, Pittsburgh, PA 15272.

Dept.	Phone #
Fax #:	Fax #

USE INSTRUCTIONS FOR PPG 3" CAL-HYPO TABLETS

1. Install the PPG chlorinator per the instruction manual.
2. Load tablets into the PPG chlorinator.
3. Determine the water flow rate of your system in gpm.
4. Determine the chlorine demand of your system.
   a. When you know the ppm chlorine demand required calculate the lbs/hr chlorine delivery by the following:

   water flow (gpm) x ppm Chlorine Demand x 0.0005 = lbs/hr chlorine

   b. If you are currently using chlorine gas, calculate usage on a lbs/hr basis.
   c. If you are currently using sodium hypochlorite, calculate the usage as (at 10% strength):

      gallons/hr = lbs/hr chlorine

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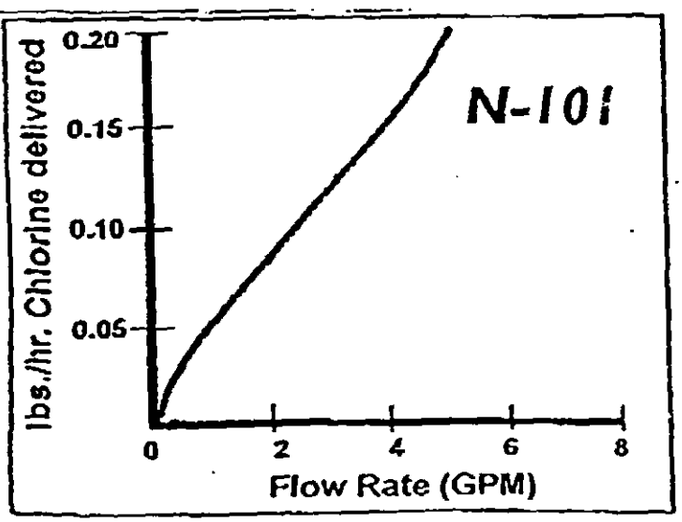
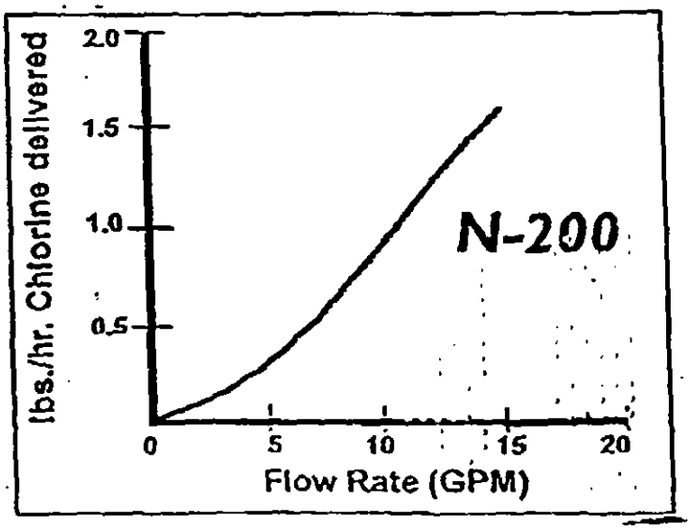
5. From the chart below, determine the flow rate of water necessary through the chlorinator. Multiple chlorinators may be used for higher delivery rates.
6. Determine that there is a chlorine residual (i.e., 0.5 ppm for drinking water) in the water stream that meets requirements.
7. Operate the chlorinator per the instruction manual.

PPG 3-inch Calcium Hypochlorite Tablet Delivery

Graphs below are representative of average tested delivery values. Multiply the lbs/hr chlorine delivered by 1.5 to determine the lbs/hr of tablets used.





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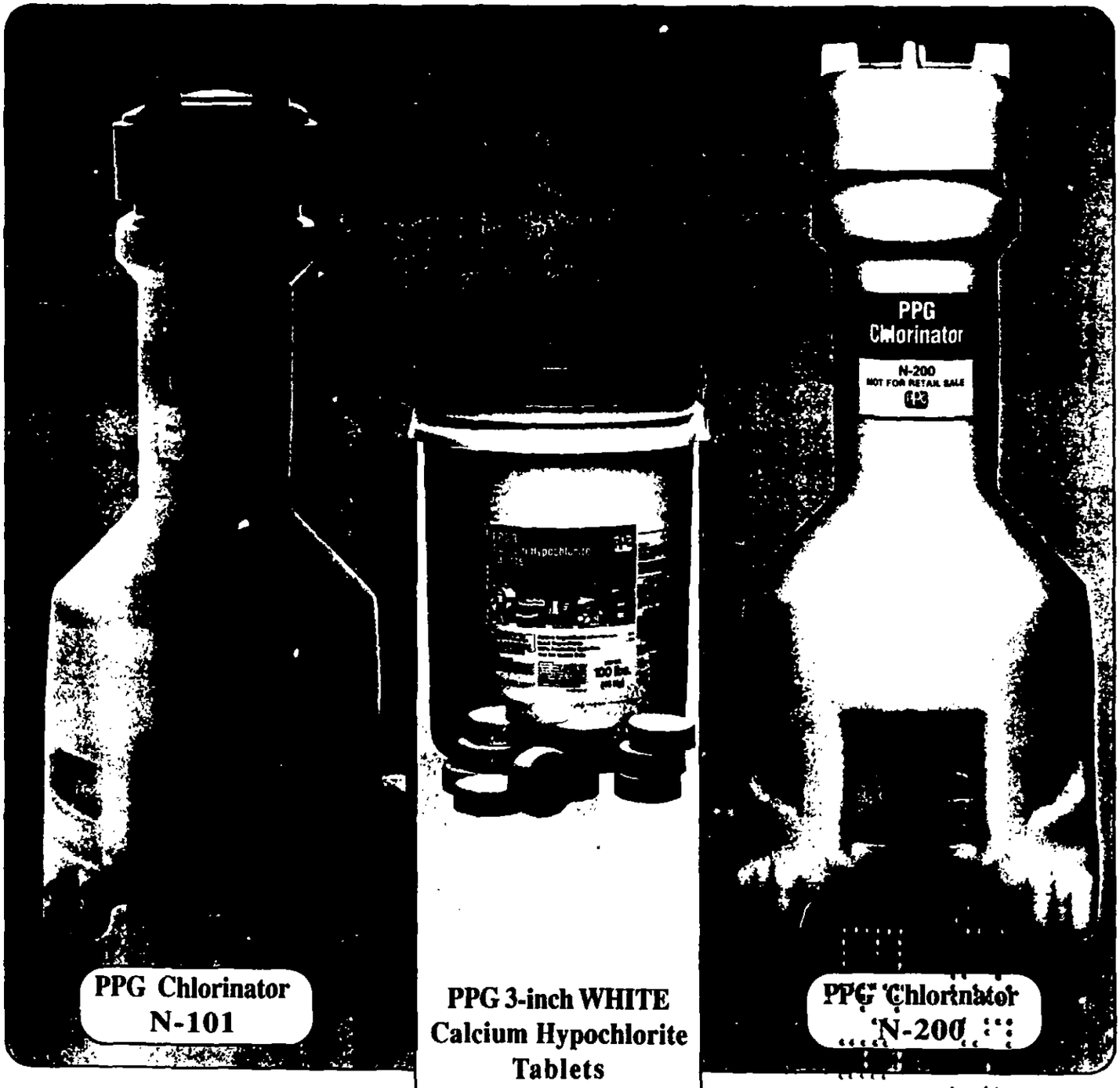
PPG Chlorinating Systems

Industrial Applications



PPG Chlorinator
N-101

PPG 3-inch WHITE
Calcium Hypochlorite
Tablets

PPG Chlorinator
N-200

PPG

PPG Chlorinating Systems
Industrial Applications

Calcium Hypochlorite Product and Application Bulletin

The PPG Chlorinating System consists of the patented PPG Chlorinators and PPG 3-inch Calcium Hypochlorite tablets. The PPG Chlorinating System is the new workhorse in automatic chlorination. This bulletin will introduce a wide range of system applications and installations to suit most sanitizing needs.

PPG Industries is committed to producing quality products which fully meet the needs of our customers. If your application is not listed here, please contact our technical service staff to determine how we can serve you.

Applications

Water Treatment:
- Cooling Water
- Drinking Water
- Potable Water
- Well Water Systems
- Waste Water
- Cooling Tower systems

Food Processing Plants:
- Canneries
- Poultry Processing Plants
- Meat Processing Plants
- Harvested Fruits & Vegetables
- Dairy Industries

Beverage Plants:
- Breweries/Wineries
- Carbonated Beverage Plants
- Cider & Fruit Juice Plants

Approved Uses

The PPG Chlorinating System consists of the PPG Chlorinators used in conjunction with PPG 3-inch *WHITE* Calcium Hypochlorite Tablets

Recommended uses are for water treatment, industrial and food processing applications.

- **USDA approved Uses:** G-4, G-5, G-7, D-2 & Q-4.
- **Kosher approved**
- **Meets AWWA standards**
- **EPA Reg. # 748-138**
- **NSF Standard 60** (pending)

For more information about PPG Chlorinating Systems, call (800) 421-2025

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Advantages of PPG Chlorinating Systems

The PPG chlorinating system is designed to provide accurate, consistent and controlled delivery of calcium hypochlorite (65% Available Chlorine) for a wide range of sanitization and water treatment applications. PPG chlorinators do not require electrical power, nor do they have any moving parts or small orifices. As a result of this patented design, the PPG delivery system is reliable to operate and requires very low maintenance.

Safety:

- No dangerous Chlorine gas releases
- No dangerous and corrosive liquid handling or potential for spills
- No odor during operation (Only minimal odor during filling procedure)

Maintenance:

- No chlorine gas corrosion
- No liquid bleach corrosion
- No leaching of metals from pumps, filters, etc. due to low pH
- No costly replacements of metering pumps or gas regulators
- No moving parts to break
- No orifices to plug
- No electrical power required for operation

Approximate Available Chlorine Conversion:

1 lb. of Chlorine gas **or**
1 gal. of Sodium Hypochlorite (10% solution)
= 1.5 lbs. of Cal Hypo tablets

Convenience:

- Easier material handling
- Tablets are easy to deliver to limited-access installation sites
- Refill is quick and easy
- Minimal clean-out needed over long periods of time
- Small size and light weight facilitates easy installation

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Delivery:

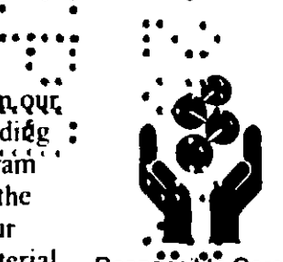
- Accurate & consistent chlorine delivery
- Dependable & simple operation
- Cal Hypo tablets will not lose strength over time like sodium hypochlorite

QUALITY

PPG Industries' commitment to Total Customer Satisfaction is supported by our Corporate Quality Statement: *"PPG will provide products and services to our customers that fully meet their requirements, on time, every time. We are dedicated to constant improvements in every area of our business and to doing our job right the first time, so as to achieve Total Customer Satisfaction."*

SAFETY

PPG is committed to safe handling of chemicals at every step of the process -- from our manufacturing and distribution process through education of the end user. Our leading participation in the Chemical Manufacturer's Association *Responsible Care*® Program is evidence of our commitment to the health, safety and welfare of our customers, the community and the industry. PPG urges everyone who stores, handles and uses our chemicals to read and follow all label directions, and become familiar with the Material Safety Data Sheets (MSDS) for any product they use.



Responsible Care®
A Public Commitment

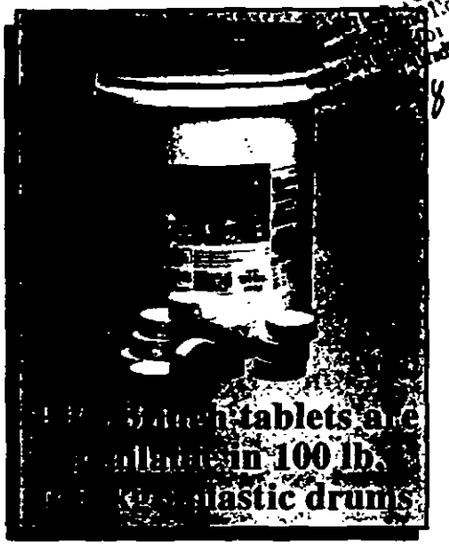
14048

PPG Chlorinating Tablets

PPG 3-inch White Calcium Hypochlorite Tablets

Properties

Chemical Name	Calcium Hypochlorite
Chemical Formula	$Ca(OCl)_2$
Molecular Weight	142.994
Dimensions	$3\frac{1}{8}$" diameter, $1\frac{1}{4}$" height, 300 grams weight
Chemical Assay of PPG Calcium Hypochlorite	
Active Ingredient -- Calcium Hypochlorite	65%
Inert Ingredients -- Readily Soluble Salts	35%



Handling and Storage

Before using calcium hypochlorite tablets, read all label directions on the container. You should follow all handling and storage directions on the container to ensure accident-free use of this chemical.

Do not skid or drop calcium hypochlorite containers. Store the chemical in a cool, dry place. Be sure the container is tightly closed when not in use.

When you take calcium hypochlorite from the container, use clean, dry rubber gloves. As with any chemical, be sure to wash your hands after handling calcium hypochlorite.

Keep calcium hypochlorite away from any fire or lighted tobacco products. If you mix calcium hypochlorite with any other chemical, a fire or explosion could result.

Potentially volatile chemical combinations with calcium hypochlorite include: other chlorinating compounds (non-cal hypo), cyanuric acid, other chemicals, acids, easily combustible materials such as oil, kerosene, gasoline, paint products and any other organic materials.

In case of fire, drench with water. When calcium hypochlorite is involved in a fire, oxygen is supplied by the chemical. So, attempts to smother the fire with a wet blanket, carbon dioxide or dry chemical extinguisher will be ineffective.

Do not reuse empty calcium hypochlorite containers. You should thoroughly rinse the containers with water and dispose of them properly, according to local regulations for plastic containers.

More detailed safety information can be found in the Material Safety Data Sheet (MSDS), available on request from PPG.

Packaging and Shipping

PPG Industries supplies calcium hypochlorite in convenient 100-pound plastic drums which can be stacked up to four drums high.

PPG manufactures calcium hypochlorite at its plant in Natrium, West Virginia.

Emergency

In case of a product emergency, call the PPG Emergency Response Center -- staffed to answer 24 hours a day.

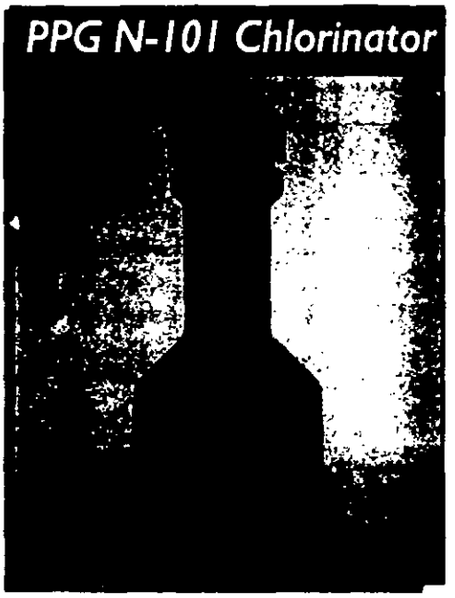
(304) 843-1300

Technical Service / Customer Service

The Technical Staff of PPG's Chemicals Group is available for consultation on the handling, storage and use of calcium hypochlorite for all application.. PPG's Technical Staff can also assist with recommendations for chlorinator installations. To access technical service or customer service, call toll-free: **(800) 421-2025** -- Monday thru Friday

PPG Automatic Chlorinators

PPG offers two automatic chlorinators to suit application needs. The N-200 model is designed for medium to high delivery applications. The N-101 model is ideal for low to medium delivery installations. Both chlorinators are designed for use with the PPG 3-inch calcium hypochlorite tablet. Both the N-101 and N-200 models offer the features listed below.

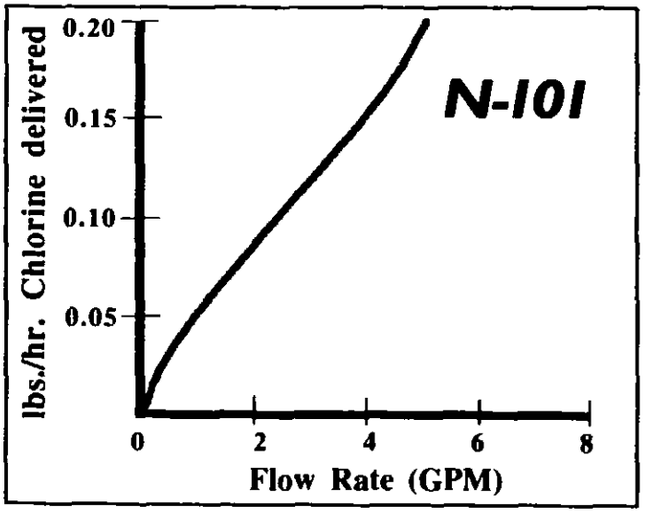


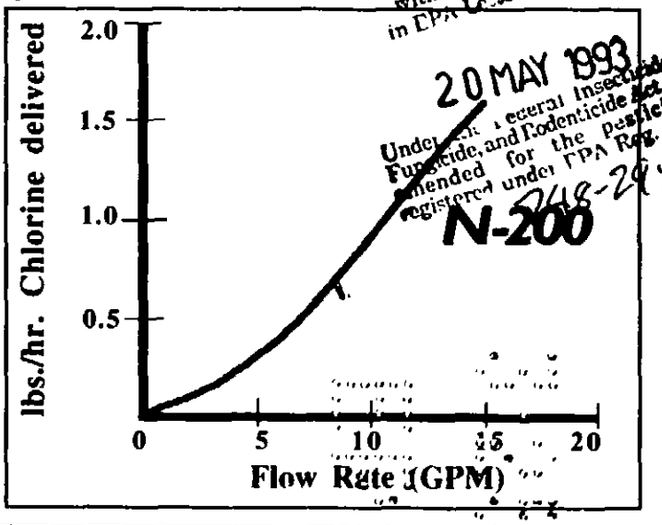
Features:

- Easy to use
- Dependable operation
- Accurate & consistent chlorine delivery due to water flow over constant surface area
- Top-loading refillable cartridge
- No moving parts
- Corrosion-resistant construction

PPG 3-inch Calcium Hypochlorite Tablet Delivery

Graphs shown below are representative of average tested delivery values. Multiply the lbs./hr. chlorine delivered by 1.5 to determine the pounds per hour of tablets used. To calculate the exact [illegible] needed for your application, consult a PPG service representative.





IMPORTANT SAFETY NOTE:

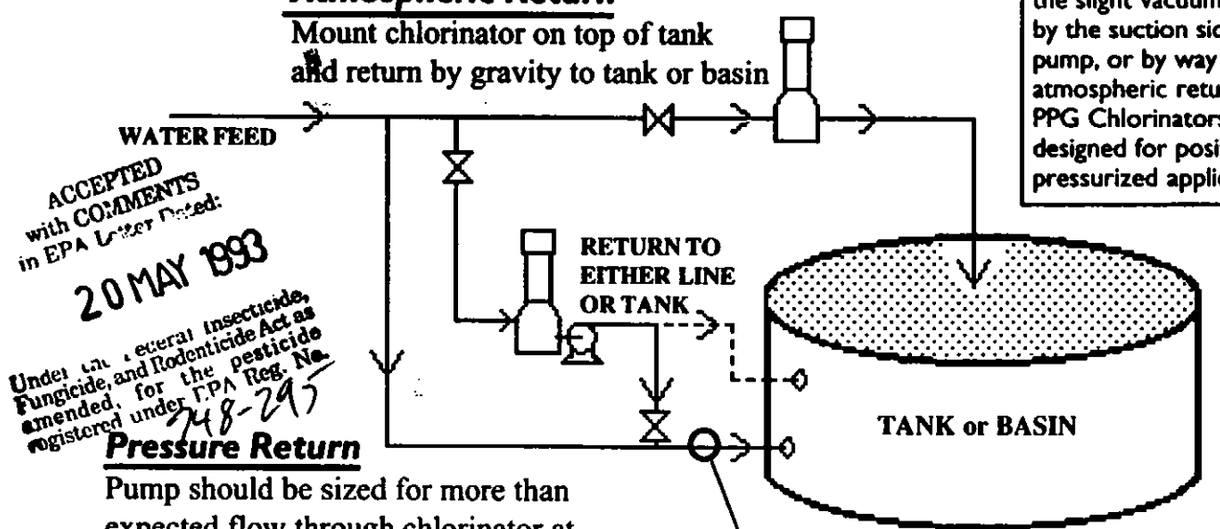
You should use only PPG 3-inch Calcium Hypochlorite tablets in the PPG chlorinators. If you mix PPG cal-hypo tablets with stablized chlorine or bromine tablets, or with any other sanitizing product, fire or explosion could result.

Installation Options

The PPG Chlorinators are designed to operate on the slight vacuum created by the suction side of the pump, or by way of atmospheric return. The PPG Chlorinators are not designed for positively pressurized applications.

Atmospheric Return

Mount chlorinator on top of tank and return by gravity to tank or basin



Pressure Return

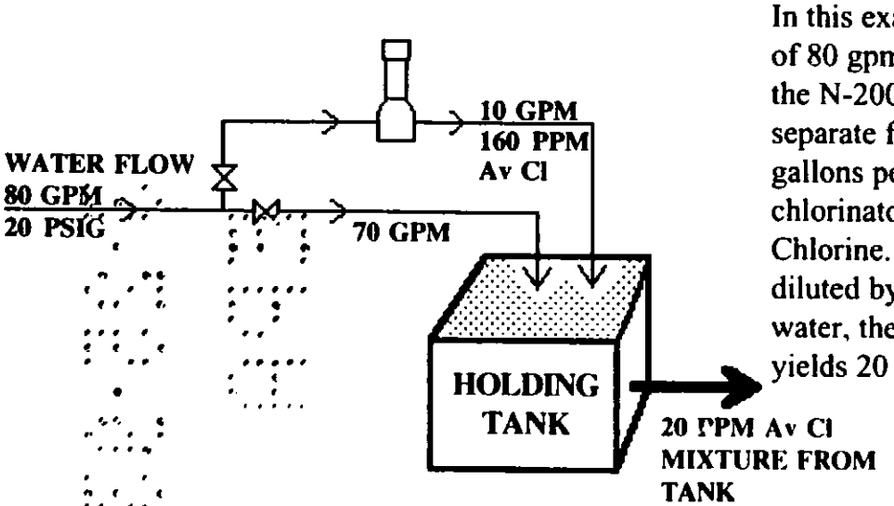
Pump should be sized for more than expected flow through chlorinator at required discharge head

Measure the pressure on the water feed line near the chlorinator return. Once you know the water flow rate and pressure, your industrial pump supplier can recommend the appropriate pump size.

Use potable or "clean" water to feed chlorinator -- not recommended for use with feedwater which contains high solids.

Mixed Flow Installation

By mixing chlorinated water from the chlorinator with unchlorinated water from the water feed line, you can achieve a regulated level of Available Chlorine in the water stored in a holding tank.



In this example, incoming water flow of 80 gpm @ 20 psig is split between the N-200 chlorinator (10 gpm) and a separate feed line (70 gpm). The 10 gallons per minute coming out of the chlorinator contain 160 ppm Available Chlorine. When this volume of water is diluted by the 70 gpm unchlorinated water, the mixture in the holding tank yields 20 ppm Available Chlorine.

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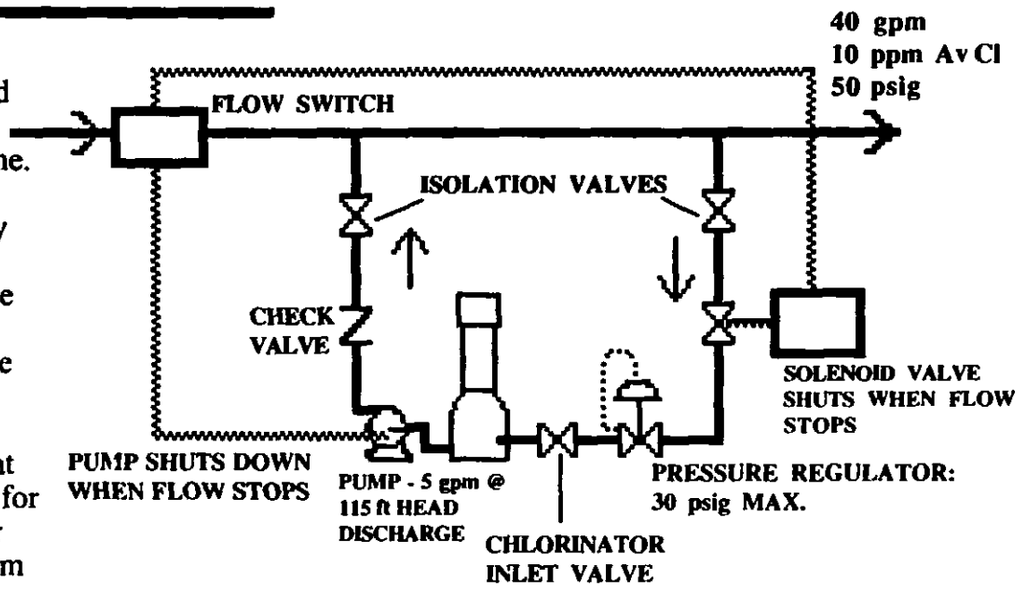
Installation Options

Fully Automated Installation

Example:

40 gpm at 50 psi in a food processing plant needs 10 ppm Available Chlorine. This calculates to 0.2 lbs/hr of chlorine delivery or 7.5 lbs. of tablet usage per day. By reviewing the Tablet Delivery graph, a flow of 4 gpm through the PPG N-200 chlorinator provides water with 100 ppm Available Chlorine at the chlorinator discharge for blending with main water flow to achieve the 10 ppm Av Cl required.



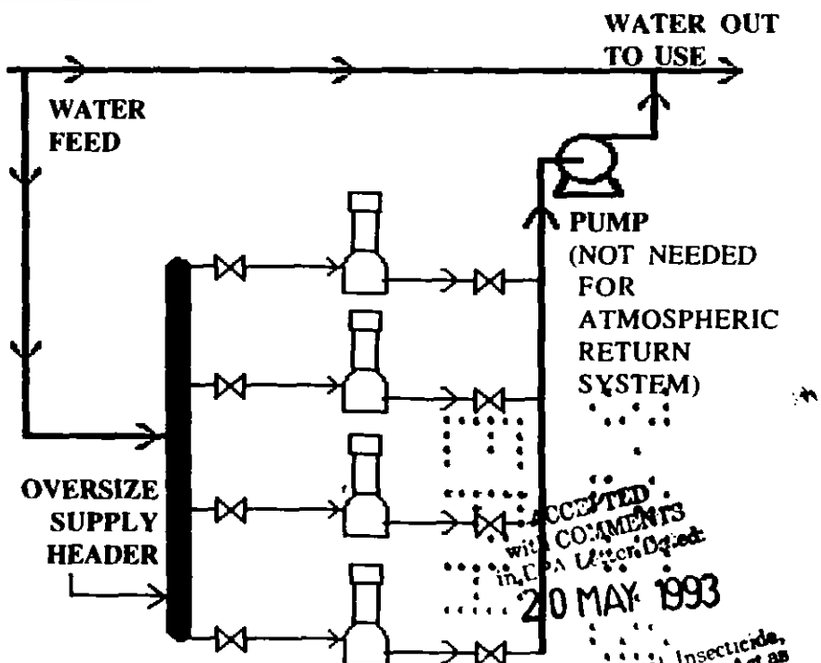
Pressure regulator valve is used to limit inlet pressure to a maximum of 30 psig.
Check valve is used to prevent a surge or backflow from damaging either the pump or chlorinator.
Flow switch is needed to react to an interuption of water flow -- shutting down the pump when flow stops, thereby protecting the pump from running dry. In such a case, the flow switch would also activate the solenoid valve which would then isolate the chlorinator.
Flow meter (not shown on this diagram) regulating chlorinator inlet flow is recommended for precise control.

Multiple Chlorinator Installations

Multiple PPG Chlorinators (N-101 or N-200) can be installed in parallel configurations where greater amounts of chlorine delivery are needed. The diagram at right depicts a representative configuration of a multiple chlorinator installation.

Whenever two or more chlorinators are installed, an oversize supply header must be used to distribute adequate flow to the chlorinators. The pipe lengths from the supply header to each of the chlorinators must be equal, providing even distribution of water flow.

This arrangement provides an even delivery of Available Chlorine from each chlorinator.



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Chlorinator Specifications

Physical Description	PPG N-101	PPG N-200
Base	11" x 11"	11" x 11"
Height	25"	25"
Weight (Empty)	10 lbs.	10 lbs.
Construction Material	Polyethylene	Polyethylene
Inlet Connection	1-1/2" FPT	1/2" PVC rigid pipe
Outlet Connection	1-1/2" FPT	1-1/2" FPT
Internals	Flexible PVC tubing	Rigid PVC piping
Capacity	12 Tablets (8 lbs.)	12 Tablets (8 lbs.)

ACCEPTED with COMMENTS In EPA Letter Dated: 20 MAY 1993

Under the federal Insecticide, Fungicide, and Rodenticide Act as amended for registration under EPA Reg. No. 748-295

PPG supplies 3-inch N-101 & N-200 BLUE cal hypo tablets and Chlorinators for NSF-Listed use in pool or spa applications. PPG 3-inch WHITE calcium hypochlorite tablets are designed for industrial uses and are not suited for swimming pool applications. Contact your service representative or PPG for more information.

Installation Recommendations

PPG recommends the use of rigid PVC piping with solvent weld fittings. Flexible PVC hose can be used where rigid piping is not practical. In any installation, be sure to check for leaks in all connections and purge any air from the system prior to running at full operating flow.

The PPG chlorinators are designed to be installed with hardware such as pipes, tees and other fittings which are commonly available at most plumbing supply companies.

In-line mixers can be used to blend the chlorination side stream with the main water flow.

PPG also recommends the use of a flow meter for precise control of inlet water flow. To locate the nearest distributor of compatible flow meters, contact:

Blue White Industries
14931 Chestnut Street
Westminster, CA 92683
(714) 893-8529 or fax: (714) 894-9492.

Parts Availability

PPG chlorinators' spare parts are available from:

Burch's Landing
354 Portage Lakes Dr.
Akron, OH 44319
(216) 644-0234

OR

Optimus Products
2762 Getwell Rd.
Memphis, TN 38118
(800) 238-0207
Fax: (901) 794-3884

PPG Industries
One PPG Place
Pittsburgh, PA 15272

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