

How to determine the required amount of *No-Chlor*[™] DeChlorination Grade Chemicals

Pipeline Size

Amount of Water

Gallons per lineal foot

	1'	10'	100'	1000'
4"	0.7	7.1	71.0	710.0
6"	1.6	16.0	160.0	1,600.0
8"	2.9	28.9	289.0	2,890.0
10"	4.5	44.6	446.0	4,460.0
12"	6.4	63.9	639.0	6,390.0
14"	8.6	86.4	864.0	8,640.0
16"	11.3	112.6	1,126.0	11,260.0
18"	14.3	142.5	1,425.0	14,250.0
20"	17.6	175.7	1,757.0	17,570.0
24"	25.4	254.0	2,540.0	25,400.0
30"	39.4	393.9	3,939.0	39,390.0
36"	56.7	567.3	5,673.0	56,730.0
42"	77.0	769.6	7,696.0	76,960.0
48"	100.5	1,005.0	10,050.0	100,500.0
54"	129.3	1,292.8	12,928.0	129,280.0
60"	148.3	1,482.5	14,825.0	148,250.0
64"	168.7	1,686.9	16,869.0	168,690.0

Amount of Chlorine

One gallon of water at 1 ppm has 0.0000084 pounds of chlorine.

How to calculate the required amount of *No-Chlor*[™] DeChlorination Grade Chemicals.

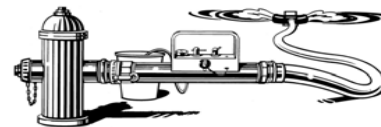
1. Determine the total amount of water to be dechlorinated.
2. Multiply total gallons **by** chlorine residual level (0.0000084).
3. Multiply above total by total parts per million, this will give you total pounds of chlorine to be neutralized.
4. Ascorbic acid: multiply total pounds of chlorine by 2.5, this will give you total required pounds of ascorbic acid needed.
5. Calcium Thiosulfate Solution: multiply total pounds of chlorine by 0.4, this will give you total gallons of CTS needed.

EXAMPLE: dechlorinate 10,000 gallons at 50 ppm.

10,000 (Gals.) X 0.0000084 = 0.09 pounds X 50 = 4.50 lbs. of chlorine

Ascorbic acid: 2.5 X 4.5 = 11.25 pounds of ascorbic acid

CTS: 0.4 X 4.5 = 1.8 gallons of Calcium Thiosulfate Solution



Measurement Technologies, Inc.

P.O. Box 2195
Redmond, WA 98073-2195
Toll Free: 877-889-8482 / (425) 836-8683

DeChlorination using the 3M & 5M **H₂O Neutralizer**[®]

1. Make connection to pipe line discharge point. Install additional hose if the discharge point is farther than twenty feet from this connection. Attach special 2 ½" F x Type 'A' adapter to either the hydrant, blow-off or discharge outlet, and then attach the **H₂O Neutralizer**[®].
2. Attach optional 3" Dust Cap, and then pressurize the device. Fill your feed solution container (when using ascorbic acid); make note of the pressure gauge reading at this time. Shut down the pressure, remove dust cap.
3. Determine discharge rate by comparing the pressure gauge reading to the Flow Chart. If required, insert one of the three orifices into the **H₂O Neutralizer**[®].
4. Attach discharge hose and Full Flow Diffuser to the **H₂O Neutralizer**[®]. See diagrams.
5. Mix **No-Chlor**[™] ascorbic acid dechlorination grade with make-up water to create the feed solution water. Follow the feed solution formulas. **OR**, if using Calcium Thiosulfate Solution insert tubing into CTS container.
6. Open Feed Solution Control valve to the full open position and place feed solution tube into the container.
7. Spread a small amount of **No-Chlor**[™] in the open discharge pathway. This will prevent any chlorinated water from being discharged into the environment.
8. Open discharge valve to start the flow of discharge water. Check for vacuum. If you do not have vacuum, check by-pass pressure gauge for pressure. If there is not enough pressure insert a smaller orifice. **SHUT DOWN DISCHARGE UNTIL YOU FIND THE PROBLEM.**
9. Verify that you have removed chlorine from the water by using OTO solution or acceptable method. If you still have not removed the chlorine from the discharge water increase the amount of **No-Chlor**[™] BY OPENING CONTROL VALVE OR DECREASING THE DISCHARGE FLOW RATE. Once you have tested for no chlorine in your discharge, you may turn down the feed solution control valve until you test for chlorine again. What you are doing is balancing the strength of your feed solution to the residual level of the chlorine in your discharge. **NOW, TEST YOUR DISCHARGE WITH THE proper testing equipment** and record the information in a record book.
10. If using ascorbic acid, fill the second feed solution container from the make-up water. At this time, check the incoming chlorine residual level of the discharge water by pulling test water from the make-up water valve. Mix your batch of solution based on the residual level of the test. Exchange feed solution tube when the first container is finished.
11. If using Calcium Thiosulfate Solution, when you finish one container transfer the tube to next container and adjust the control valve on the feed solution line.
12. You should be testing your water chlorine residual level every ½ hour and adjusting the feed solution as to not waste the dechlorination solution.



Before you can go out into the field to dechlorinate, there are a few items that you must put together:

- Determine the size of feed solution containers required for the project. Two containers are required.
- Calculate the required amount of **No-Chlor**[™] dechlorination grade ascorbic acid required for the project using the feed solution charts in the maintenance manual or the Feed Solution (spreadsheet program) from the CD-Rom.
- If the connection is different than a ½" Male NST, make up the required connection.
- Proper testing equipment. Chlorine indicator and a DPD type-testing unit are recommended.
- Notify proper authorities of your discharge, if required.

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www.h2oneutralizer.com

