



## CHLORINE TREATMENT TO CONTROL ALGAE AND ORGANIC BUILDUP

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### **Chlorine treatment for controlling algae, and/ or other organic buildup in drip tubing and emitters.**

Chlorine is an effective treatment to kill or control algae and other organic buildup and is commonly used as an additive in municipal drinking water, swimming pools, hot tubs, etc. In small quantities there is minimal harm to humans, animals or plants. Quantities of chlorine exceeding 50ppm (parts per million) are toxic to plants, so reasonable care should be taken in how chlorine is used.

Best results are obtained by injecting chlorine at the end of a watering cycle to control organic buildup in a trickle/ drip irrigation system. The object is to have the algae or organic particles end up being coated by a layer of active chlorine just prior to shutting off the irrigation system or a particular zone of watering. This also minimizes the amount of chlorine needed. To obtain a complete "kill" of the organic materials often requires twelve (12) hours or more of contact time. *Care should be taken to allow sufficient time for the injected chlorine to travel from the injection point to all parts of the irrigation system prior to shut down, often requiring 30 minutes or more.*

The amount of chlorine needed for a complete "kill" of algae or organic materials depends on the concentration of the organic material in the irrigation water. No two water sources are the same and the concentration needed will vary during the season as weather conditions for organic buildup change. Generally, the level of algae and organic materials increase significantly during the warmer summertime conditions. Chlorine also is used up as it attaches to the organic material. A test kit that measures the unattached chlorine (often referred to as free-chlorine) is very useful. *It is imperative that when injecting chlorine at least 1ppm of unattached, or free-chlorine, is available at all times so that all the algae gets coated.*

Injecting at 10ppm of chlorine is sometimes necessary in order to maintain at least 1ppm of "free-chlorine" throughout. The best way to insure that enough chlorine is being injected is to go close to the end of the trickle tubing line and let the emitter drip irrigation water into the "free-chlorine" test kit until the water reaches the line on the test kit. Next, by adding a measured capsule of powder, a red color occurs if "free-chlorine" is present. By comparing the relative darkness of the red color to the color chart of the test kit you get the resulting ppm of "free-chlorine". *For best results, 1-3ppm of "free-chlorine" should be available at the end of the line. If the test results are not in this range, adjust the chlorine injection rate until the proper concentration is obtained.*

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Two common and relatively available sources of liquid chlorine are available. Household bleach is one good source but it usually has only 5% active chlorine. Pool Shock (liquid swimming pool chlorine) usually has around 10% active chlorine and is often less expensive to us.

Make sure unused liquid chlorine is stored out of direct sunlight so that it doesn't lose its active chlorine. Keeping fresh chlorine (should not exceed three (3) months) is also important in maintaining an active chlorine supply. Mixing dry powdered chlorine, such as HTH, with water is not recommended unless the chlorine supply tank has agitation because the dry powder otherwise does not always stay in solution. Using the liquid chlorine is best. Gaseous chlorine may also be used however gaseous chlorine is very dangerous if breathed by humans. ***GASEOUS CHLORINE SHOULD ONLY BE USED BY TRAINED TECHNICIANS.***