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Chlorine Disinfection Practices and Bioline[®]

While some jurisdictions require that wastewater effluent be treated with a disinfectant prior to land application, many designers incorporate the practice solely out of habit. Surface discharge, including spray dispersal of secondary effluent, is commonly disinfected to remove water borne disease-carrying microorganisms. To protect those who may come in contact with the effluent and to prevent objectionable odors it is common practice to use ultraviolet light or some form of chlorine to remove the objectionable organisms.

Even though the need to disinfect the effluent that is not land applied but dispersed subsurface is debatable, it is not our intent to argue the efficacy or the regulations requiring disinfection for these systems. Rather we will review how the most used commonly method of disinfection affects the life and material compatibility of Netafim Bioline[®] wastewater drip dispersal tubing.

The customary method of feeding chlorine disinfectant in residential systems is the tablet feeder. In these devices calcium hypochlorite cake tablets, about 3" in diameter, are dropped into a tube over which the effluent flows. The tablets slowly dissolve producing a hypochlorous acid solution thus introducing the disinfecting agent into the effluent. Many jurisdictions expect the homeowner to maintain these systems and leave it up to them to purchase and replenish the chemical when needed.

The difficulty arises when homeowners substitute chlorine tablets that are made for swimming pools. These tablets are actually a stabilized chlorine compound, not calcium hypochlorite, used to mitigate the effects of sunlight: trichloroisocyanuric acid or sodium dichloroisocyanurate. One of the difficulties with these compounds is that they make the chlorine less effective thereby reducing the efficacy of the disinfection process.

The chemical produced by these **swimming pool tablets**, cyanuric acid, do not hold up as well as a wastewater disinfectant and **are not recommended for Netafim Bioline[®] dripperline dispersal systems**. The concentration of cyanuric acid can be detected with a special test kit (not a chlorine test kit which would produce false low "chlorine residual" readings since the dominant chemical produced is not hypochlorous acid but cyanuric acid).

Only chlorine tablets approved for wastewater, those made from calcium hypochlorite are acceptable.



Bioline® dripperline and the emitters used in Netafim USA's Bioline® products are made from polyethylene and EPDM rubber (Ethylene Propylene Diene Monomer) which have "excellent" and "good" resistance ratings to chlorine (calcium hypochlorite and hypochlorous acid) and are **compatible with chlorine compounds produced from calcium hypochlorite tablets.**

Netafim USA strongly suggests following the recommendations of the manufacturer to ensure that the warranty remains valid.

For more information, refer to the following for additional information regarding disinfection practices for wastewater effluent disinfection:

EPA Onsite Wastewater Treatment Technology Fact Sheet 4, Effluent Disinfection Processes