

# *HVAC /R Condensate Water Treatment*

## *A Comparison of Products*

Condensate water in drip pans has historically been a problem due to the buildup of bacteria, mold, fungi and slime. Some of this growth can become airborne, picked up by the fan unit and dispersed into the enclosure it serves. These contaminants can also cause unpleasant odors and clogging of the drain line and / or the drain pan itself thus creating an overflow that contaminates living spaces or refrigeration equipment and can also result in a considerable expense for clean up and property replacement. In the case of hotels and motels there can also be substantial loss of revenue while the room is out of service.

One of the first treatments for this problem was a tablet of chlorine salts that depended on the solubility of the salt. Tablet life depends basically on hardness, packaging and water flow. This type of tablet is moderately effective but has a very short life (usually counted in days), unpleasant odor and is highly corrosive to metal.

The second most popular tablet contains a combination of a solid quaternary biocide and borax. Performance is about the same as the first example and is determined by the same criteria with the same drawbacks such as life span and corrosiveness.

A better replacement for the tablet is a new version of water treatment that is a solid "strip". The first, and demonstrably the best, type of strip is **T.R.BIO KLEAN** that is the most scientifically advanced product on the market today. Developed with the latest controlled release technology called monolithic entrapment this product slowly, and simultaneously, releases several active ingredients by way of a polymer matrix. These materials keep the water free of odor causing bacteria, mold, mildew, fungi and slime. They keep the pan clean, retard corrosion and lubricate metal parts which stop debris from "sticking" to the pan so it flows down the drain. Additionally, **T.R. Bio Klean (A/C Pan Treatment)** has a pleasantly scented odor counteractant that is released into the air stream to "freshen" the air in the living spaces.

The most common "knock off" of the Bio Klean strip is the hot melt type. The hot melt refers to the manufacturing process. This strip, or block, is a solid (usually paraffin) with a biocide added that melts at a low temperature and solidifies at room temperature. Product life is dictated by solubility, packaging, water flow and temperature although the types we have tested so far last only a few days at best. This product has limited applications.

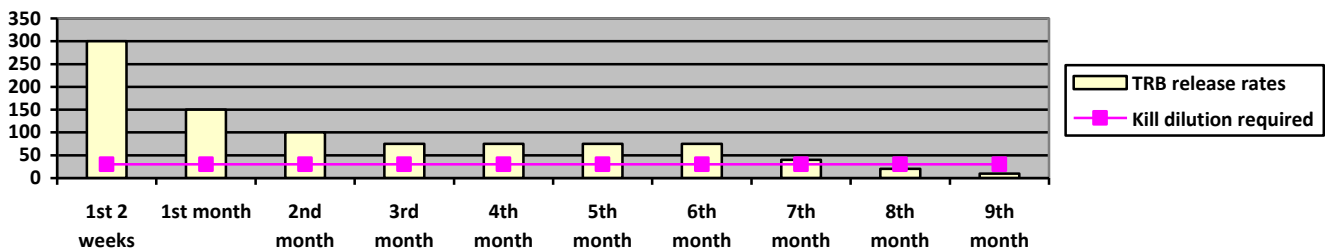
The latest entry into the drain pan treatment market is a product that requires installation of an inline reservoir that holds a large chlorine tablet. The reservoir is installed in the drain line after the drain pan. This treats only the drain line itself and does nothing for the drain pan. The manufacturer claims that the tablet emits chlorine gas that is "sucked" back into the drain pan to eliminate growth. This action is by itself suspect but assuming it does draw chlorine gas into the drain pan, this gas cannot affect bacterial growth but this corrosive, noxious and explosive chlorine gas can certainly be distributed by the air handler into the occupied space.

Testing is currently underway to document this products six-month claim. Considering this is nothing more than a large chlorine tablet, the same as used in your swimming pool, it is highly doubtful that it can live up to the six month claim.

Another product is the ultra-violet light unit. It is an ultraviolet lamp that is installed in the air handler. While ultra-violet will control micro-organisms it does so only where the light actually shines. Any areas where the light does not reach will grow contaminants. We feel that the UV may possibly reduce surface microbial growth but you may still get biological's that will grow in the drain pipes and in areas where the UV does not hit, consequently to "stop" drain overflows **T.R. Bio Klean** is still the product of choice.

One of the most significant benefits of **T.R. Bio Klean** is its superior corrosion retarding properties. We have tested **T.R. Bio Klean** against every product we have found on the market. This includes tablets, liquids and other strip type products. **T.R. Bio Klean** stands out as clearly the best.

PPM Necessary for Negative Biological Growth



This is a graphic representation of the release characteristics of T.R. Bio Klean's active agent vs. necessary dilution to provide the PPM of biocide to keep the drain and pan clean and biologically free. Basically we "shock" it for the first 1 month then keep consistent levels for up to 6 months.

