



TECHNICAL NOTE

18 Preventing and dealing with algae in pools

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Any pool can be exposed to algae – especially an outdoor pool. As sunlight encourages algal growth, outdoor pools are particularly vulnerable. Foreign objects like canoes can introduce algae. Phosphates often used in detergents and cleaners and also added to some water supplies to reduce plumbosolvency, can also encourage algal growth. Anti-foaming agents sometimes used in pools as sequestering agents can also encourage algae. And contaminants in pool water (skin fragments, cosmetics etc) provide nutrients for algae.

Algae grow rapidly in the presence of warmth and sunlight and need to be eradicated quickly – as the longer they persist, the more difficult they are to remove. So it is important to act immediately algae are seen. But prevention should come first.

Types of algae

There are many different algae, and some confusion about how they should be classified. They are generally more of a problem in outdoor than indoor pools (and more so in lakes etc). They can be classified broadly into two groups:

Green (eukaryotic) – a free floating algae, which often turns water cloudy green and can grow on any pool surface. If treated early, this type is easy to kill. There is a yellow-brown-red variety, sometimes called mustard algae, found on pool walls, floors and steps and behind ladders.

Blue-green (Cyanobacteria) These organisms are bacteria and can cause skin reactions and other health effects to people bathing in heavily contaminated natural waters. They are not a health problem in well maintained swimming pools; they are susceptible to chlorination.

Prevention of algae

Algal growth is often easier to prevent than to remove. The main treatment is getting the pool management right from the start. Algal growth should not happen if the pool is designed and operated properly. Good filtration (with routine coagulation), effective circulation (minimising dead spots) and appropriate disinfectant levels are all important in preventing algae. Daily vacuuming is also a useful preventative.

Treatment of green algae

Increasing the free chlorine concentration within the water to 10mg/l for several hours is usually sufficient to kill off algae. The procedure for superchlorination is detailed in a separate Technical Note. With no-one in the pool, increase disinfectant levels, increase water movement across the base of the pool by fully opening the sump and reducing the level deck return flow. Allow to circulate for two or three hours to kill the algae, brush off dead algae, vacuum pool base and allow algae to be removed by filtration.

If this is unsuccessful, it may be that it is not recent algal growth but an established, possibly complex, biofilm of various microorganisms. Although proprietary algicides are available, they may contain quaternary ammonium, polyoximino or copper compounds, some of which can have a detrimental effect on the chlorination process. Some copper-based (long-term) algicides can cause staining if the pH is over 7.3. These should be avoided if at all possible. In any event, if a proprietary algicide is to be used it should be approved in accordance with the EU Biocidal Products Directive 98/8/EC, and be compatible with other pool chemicals. And its use should be minimised.

Biofilms

Biofilms can often give the appearance of algal growth. Grout can often become contaminated during the construction stage and it is good practice to clean the pool thoroughly prior to filling by scrubbing the surfaces with a solution of 50mg/l free chlorine and leaving it to dry.