Legionella in Sensory Bubble Tubes

Bubble Tubes

A bubble tube is a multi-sensory tools used to develop visual and tactile skills in pupils, often located in sensory rooms. They consist of water in an open or sealed tube, a pump to generate air bubbles, and a light source shining from below.

While they can be useful sensory tools, there is potential for contamination of the water from the environment, either through poor quality water, insufficient filtering on the air pump, and if not capped through contaminants in the air. By their nature they can provide the environment for algae and bacteria to grow so cleaning, biocide dosing and regular water changes are essential to ensure they can continue to be used safely.

Neglecting a bubble tube's cleaning routine can cause it to become a breeding ground for algae and bacteria, including harmful organisms like Legionella. This growth can also affect the diffuser, reducing the amount of bubbles that are released.

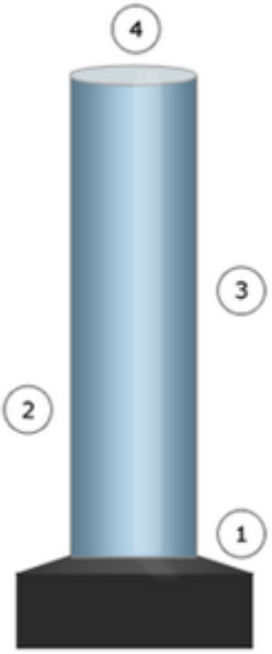
How to clean a bubble tube

The lamp is a visual piece of equipment. If its effects are obscured, then it won't have the same impact on its users. To prevent this from happening, suppliers recommend a regular water change, usually either every 4-6 weeks or 8-12 weeks.

This is dependent on factors such as the tube's exposure to sunlight, its size and the addition of BCB fluid. BCB is a specially designed formula which is gentle on the acrylic tube and doesn't scratch or cloud it. It has been formulated based on the popular Bronopol biocide, a formula proven to prevent the spread of green algae and reduce the risks of harmful bacteria growth. It is not advisable to use sterilising tablets, as this could damage the inside of the tube over time.

Also, you may wish to consider the use of distilled water, as tap water may still contain a level of bacteria and potentially lead to faster proliferation.

How Infection Risks Develop in Bubble Columns



1. Dust and other debris are drawn into the water in the tube via the air pump. Materials such as dirt, fibres from carpets and clothing and dead skin, along with insects all harbour micro-organisms which may contaminate the water.

2. Warmth, light and aeration in the water provide ideal conditions for microbial growth. Bacteria and algae multiply in the water and grow on the inner walls of the tube, forming slime / bio-film, which provides an ideal environment for bacteria to grow and will spoil the visual effect of the tube.

3. The water used to fill the tube, or to 'top-up' during operation, may contain unknown levels of bacteria dependent on the source and how the tube is topped up or re-filled (dirty buckets / hose pipes).

4. As the bubbles burst at the surface of the water, they release an aerosol which can potentially be carried into the air around the tube.