

## Incubating Water Baths - Water Quality Maintenance

The following advice is issued in response to a recent enquiry from a School Safety Officer concerning water quality in incubating water baths. The laboratory in question used three water baths for culture incubation at temperatures of 37°C, 56°C and 60°C. The principal concern had been that the 37°C water bath operated at an optimum temperature for possible legionella contamination.

(NB. Water temperatures in the range of 20 to 45°C favour growth. It is uncommon to find proliferation below 20°C, and it does not survive above 60°C. The optimum laboratory temperature for the growth of the bacterium is 37°C. Organisms may, however, remain dormant in cool water, multiplying only when the temperature reaches a suitable level).

Samples of all three baths were taken and sent to the Public Health Laboratory for analysis. The 37°C bath was found to have a high count of legionella but the 56°C and 60°C were clear.

The risk of infection would only arise if the water is allowed to become an aerosol mist (i.e. where a stirrer is fitted to the water bath, if the water level drops to the level of the stirrer paddles and causes a spray.) and there is likelihood of water droplet inhalation. However the risk is considered to be extremely low since such equipment is very common and has a long history of use without any reported infection.

The following options are recommended as part of a prudent water quality maintenance regime for water baths operating at temperatures between 20 and 50°C:

- Thermal disinfecting by regularly heating the water up to 60°C (once a month would be satisfactory) to kill off any contamination
- To change the water at least monthly and clean the water bath to remove sediment, sludge, scale or organic material, which can act as a source of nutrient for legionella
- To treat the water with biocide tablets or chlorine. (Further advice would be required to establish the correct type of biocide for the application, its dosage and regularity). This approach would also have a cost implication.

It is advised that an appropriate notice be displayed on or next to the equipment as a reminder of whichever treatment regime is adopted