



### For the measurement of bacterial and fungal contamination in fluids.

Combi dip-slides are designed for monitoring both microbes and fungal contamination in water and industrial fluids. When present in great numbers, microbes and fungi may pose a risk to health, and lead to corrosion and circulation problems.



Combi dip slides are dual media enabling them to be used for checking total bacterial counts as well as yeasts and fungi.



Combi dip slides do not specifically indicate the presence of legionella bacteria, but are for use to indicate trends in microbiological quality.

The use of dip slides should be commenced only after a system has been cleaned and disinfected, and an effective water treatment regime set up.

Dip slides should be used to show whether the

treatment continues to be effective, and to indicate if remedial action, such as cleaning or disinfection, should be taken.

Sampling should be carried out on a regular basis, from the same location each time. **It is also vital for meaningful results that the incubation period, temperature and location be identical each time the test is carried out on a particular water system.**

#### CLEANING and DISINFECTION

Kamco supply a range of cleaning and descaling products for water systems, together with products for sterilising and testing them.

**KAMCHLOR TABS** are a safe, easy to handle source of free chlorine in tablet form, to give a pre-measured dose, enabling non-technical users to make up accurate in-use solutions at the desired level.

**KAMCHLOR** tabs are added to water, and allowed to dissolve. The large surface area in relation to mass, combined with effervescent properties, ensures rapid dissolution.

**FREE CHLORINE LEVEL TEST KITS** are available to give a quick and practical check on the level of free

chlorine in a test sample of water, to ensure both effective sterilisation and adequate flushing after the sterilisation process.

**NEUTRALISING AGENT FOR FREE CHLORINE** is used to neutralise chlorine solutions after sterilisation has been completed, and before discharge of the chlorinated water to waste.



## Combi dual media dip-slides

### Instructions for use

1. Unscrew the tube and withdraw the combined cap and 'tongue' unit, without touching the agar coated surfaces.



2. Take a sample of the fluid to be tested in a container and dip the dip slide tongue into it, or expose the slide to the running fluid. **Both agar surfaces must be fully wetted.**



3. Remove the slide from the fluid and allow excess fluid to drain off the slide. Blot the lower edge of the slide on clean absorbent paper.

4. Screw the dip slide tightly back into the tube.

5. Fill in the label and affix it to the tube.

### Incubation

Place the tube upright, in a warm place, or incubator at a temperature of 27°C to 30°C, or at an approximate temperature equal to that of the fluid being tested. Temperatures above 30°C may dehydrate the agar and give inconsistent results.

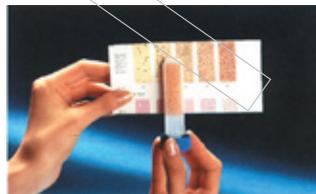
The incubation period for bacteria is usually 24-48 hours. For yeasts and moulds an incubation time of up to 24-72 hours may be required to achieve quantifiable microbial growth. If the incubation temperature is considerably cooler than the fluid being tested, microbial growth may be slowed, and continued incubation for a further few days may be necessary to detect the presence of organisms.

### Interpretation of results

Bacteria will grow on the paler straw coloured agar. Most bacterial colonies will appear red in colour, but can on occasions be colourless.

The density or numbers of colonies, both red and colourless, should be compared with the chart supplied with Combi dip slides.

If the fluid to be tested has a severe infection (over 10<sup>7</sup>/ml), a confluent



growth can appear on the surface of the slide, rather than distinct colonies. If this growth is colourless, it could be misinterpreted as a negative result. To prevent this, all apparently clear dip slides should be examined against a reflected light or compared with a sterile, unused dip slide.

Fungi and yeasts will grow on the pink rose bengal agar side of the slide. Most yeasts will appear as smooth round colonies, white or pink in colour.

Occasionally red colonies may appear. These are usually bacterial growth. The density or number of yeast colonies, of all colours, can be quantitatively evaluated using the chart.

Other fungi or moulds are characterised by the furry nature of their colonies, which spread rapidly across the slide making quantitative evaluation difficult. However, if the slide is examined at an early stage of growth, distinct colonies will be observed and the chart will give an indication of the level of infection.

It is not possible to give any universally valid limits, however the following general guidelines may be used:

#### Bacterial count:

10 <sup>4</sup>	slight infection - probably acceptable.
10 <sup>5</sup> or more	moderate infection - <b>take immediate action to clean / sterilise system</b>

#### Disposal of used slides

As the incubated slides are bacterial cultures, they should be handled carefully. Disposal of used slides can best be achieved by burning them, by immersing both slide and container in a disinfectant overnight, or by autoclaving them after loosening the caps.

#### Storage

Unopened dip slide tubes should be stored in cool temperatures (8-15°C) protected from sunlight and draughts. Slides must not be frozen. The expiry date is marked on the box.

Correctly stored the dip slides will have a shelf life of 6-9 months and within this period will remain suitable for use as long as there is no visible contamination and the agar surface remains smooth and attached to the slide. Slides showing a bacterial growth, although unopened, are not usable.

Table of reference - bacteria

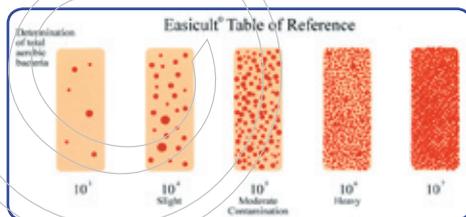


Table of reference - yeasts & fungi

