



## DPD LIQUID ALTERNATIVE TO ALL DPD TABLET PHOTOMETERS

### DPD-liquid reagents

Order Code	Reagents
47 10 10	DPD 1 buffer solution 15 ml
47 10 20	DPD 1 reagent solution 15 ml
47 10 30	DPD 3 solution 15 ml
Range	0.02 – 4 mg/l total chlorine
Sample volume	10 ml

### Instruction manual

#### Zero setting (photometric determination)

1. When using a Lovibond® photometer fill a clean 24-mm vial with 10 ml water sample, perform zero setting, and then empty it.

#### Determination of free chlorine

1. Rinse the 10 ml vial with the water sample and leave empty.
2. Fill the vial with regular drops by holding the bottle vertically and pushing it slowly.

**6 drops of DPD 1 buffer solution**

**2 drops of DPD 1 reagent solution**

3. Fill the vial up to the 10 ml mark with the sample and fit the cap.
4. Invert the vial a few times to mix the contents.
5. Take the test reading - see instrument instructions.

**Result = mg/l free chlorine**

6. Rinse out the test vial thoroughly if testing is finished.

#### Determination of total chlorine

1. After taking the free chlorine reading above, remove the cap and add  
**3 drops of DPD 3 solution.**
2. Refit the cap and invert the vial a few times to mix the contents.
3. Allow to stand for 2 minutes.
4. Take the test reading.

**Result = mg/l total chlorine**

5. Rinse out the test vial thoroughly.

#### Determination of combined chlorine

The combined chlorine content is calculated as follows:

**Combined chlorine mg/l = total chlorine result mg/l – mg/l free chlorine result mg/l**

### Important notes

1. When taking samples, to minimise loss of chlorine, take care to avoid shaking or general aeration. Carry out the test immediately after sampling.
2. Colour development occurs at pH 6.3 – 6.5. The reagents contain a buffer to adjust to this range. Highly alkaline or acidic samples must however be neutralised before testing.
3. Chlorine concentration above 4 mg/l can lead to low results due to bleaching of the colour. In these cases the sample should first be diluted with chlorine-free water and the test repeated - remember to multiply the result by the dilution factor.
4. As many household detergents (e.g. washing up liquid) have a chlorine demand, the subsequent determination of chlorine may give low results. In order to eliminate these errors we refer users to DIN 38 408 Part 4 Para 6.2:  
"The glass vessels should be free of substances with a chlorine demand. This can be achieved by storing them in a sodium hypochlorite solution (0.1 g/l) for 1 hour and then rinsing thoroughly with water."
  5. After use replace the bottle caps securely noting the colour coding.
  6. Store the reagent bottles in a cool, dry place ideally at between 6 °C and 10 °C.
  7. Reagents should be used within 1 year of the date of manufacture (see label).

