

Oxygen

**Test kit for performing colorimetric tests
on dissolved oxygen in surface water and sewage**

Method:

modified Winkler method

In the alkaline range, dissolved oxygen oxidizes manganese(II) ions to higher manganese hydroxides. Acidification leads to the release of manganese(III) ions which react with a special reagent forming a dark red dye.

Measurement range:1 - 10 mg/l O₂**Contents of test kit (*refill pack):**

sufficient for 50 tests

1 x 15 ml O₂-1*1 x 15 ml O₂-2*1 x 30 ml O₂-3*

2 screw-plug measuring glasses

1 slide comparator

1 colour chart

1 plastic syringe 1 ml

1 instructions for use*

additionally required: oxygen reaction bottle (Cat. No. 915 498)

Hazard warning:

O₂-2 contains sodium hydroxide solution 32%. O₂-3 contains sulphuric acid 83%. **Causes severe burns.** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. For further information, please ask for safety data sheets.

Instructions for use:*also refer to the pictogram on the back of the colour chart**Cover the working surface with a polyethylene-coated filter paper.*

1. Pour a **1 ml** water sample into one of the measuring glasses and place it on position A in the comparator.
2. Rinse the **oxygen reaction bottle** several times with the water to be tested and fill until it overflows without air bubbles.
3. Add **5 drops of O₂-1**.
4. Add **5 drops of O₂-2**, close the bottle with the stopper (avoid air bubbles) and mix by shaking.
5. After **1 min** add **12 drops of O₂-3**, close the bottle and shake well until the deposit is dissolved.
6. Pour **1 ml** of the resultant reaction solution into the second measuring glass and place it on position B in the comparator.
7. Slide the comparator until the colours match in the inspection hole on top. Check the measurement reading in the recess on the comparator reed. Mid-values can be estimated.
8. After use, rinse out the oxygen reaction bottle and both measuring glasses thoroughly and seal them.

The reagents can be used for the **photometric evaluation** with photometer PF-11.

The method can be applied also for the analysis of sea water.

Disposing of the samples:

The used analysis specimens can be flushed down the drain with tap water and channelled off to the local sewage treatment works.

Interferences:

Most oxidizing and reducing substances interfere, e. g. active chlorine, higher manganese compounds, ascorbic acid, iodide, nitrite, sulphide and sulphite. Organic compounds interfere, if the potassium permanganate consumption exceeds 60 mg/l.

Conversion table:

mg/l O ₂	mmol/m ³
1	31
2	63
3	94
4	125
6	190
8	250
10	310

Storage:

Store the test kit in a cool (< 25 °C) and dry place.