

microtest

Test Kit	Measuring Range
Acidity 0.1	1 drop = 0.1 mmol/L
Alkalinity 10	1 drop = 10 mg/L CaCO ₃
Alkalinity 10 p+m	1 drop = 10 mg/L CaCO ₃
Alkalinity 50	1 drop = 50 mg/L CaCO ₃
Alkalinity 50 p+m	1 drop = 50 mg/L CaCO ₃
Ammonium <i>IND</i>	0 - 2 mg/L NH ₄ ⁺
Ammonium <i>IND+</i>	0 - 2 mg/L NH ₄ ⁺ (seawater)
Calcium 10	1 drop = 10 mg/L Ca ²⁺
Calcium 50	1 drop = 50 mg/L Ca ²⁺
Carbon Dioxide 5	1 drop = 5 mg/L CO ₂
Carbon Dioxide 20	1 drop = 20 mg/L CO ₂
Chloride 10	1 drop = 10 mg/L Cl ⁻
Chloride 50	1 drop = 50 mg/L Cl ⁻
Chlorine 1	1 drop = 1 mg/L Cl ₂
Chlorine 5	1 drop = 5 mg/L Cl ₂
Chlorine <i>DPD</i>	0 - 4 mg/L Cl ₂
Chlorine <i>DPD</i> ^{HS}	0 - 1.5 mg/L Cl ₂
Chromate <i>DPC</i>	0 - 3 mg/L CrO ₄ ²⁻
Copper <i>CZ</i>	0 - 4 mg/L Cu ²⁺
Dissolved Oxygen	1 drop = 0.5 mg/L O ₂
Iron <i>PHE</i>	0.2 - 8 mg/L Fe ²⁺
Iron <i>FZ</i> ^{HS}	0.025 - 0.4 mg/L Fe ²⁺
Manganese <i>FO</i>	0.2 - 8 mg/L Mn ²⁺
Nitrate <i>NED</i>	0 - 20 mg/L NO ₃ ⁻
Nitrate-N <i>NED</i>	0 - 4.5 mg/L N
Nitrate-N <i>NED</i> ^{HS}	0.05 - 0.8 mg/L N
Nitrite 50	1 drop = 50 mg/L NO ₂ ⁻
Nitrite <i>NED</i>	0 - 1 mg/L NO ₂ ⁻
pH 4.5 - 9.0	4.5 - 9.0 pH
pH 6.0 - 7.6	6.0 - 7.6 pH
Phosphate <i>MB</i>	0.2 - 7 mg/L PO ₄ ³⁻
Phosphate-P <i>MB</i>	0.07 - 2.3 mg/L P
Phosphate-P <i>MB</i> ^{HS}	0.025 - 0.4 mg/L P
Phosphate-P <i>MB+</i> ^{HS}	0 - 0.4 mg/L P (seawater)
RH 1 Residual Hardness	Limit = 1 mg/L CaCO ₃
RH 5 Residual Hardness	Limit = 5 mg/L CaCO ₃
Sulphide <i>MB</i>	0 - 2 mg/L S ²⁻
Sulphite 2	1 drop = 2 mg/L SO ₃ ²⁻
Sulphite 5	1 drop = 5 mg/L SO ₃ ²⁻
TH 1 Total Hardness	1 drop = 1 mg/L CaCO ₃
TH 10 Total Hardness	1 drop = 10 mg/L CaCO ₃
TH 20 Total Hardness	1 drop = 20 mg/L CaCO ₃
TH 50 Total Hardness	1 drop = 50 mg/L CaCO ₃
TH 100 Total Hardness	1 drop = 100 mg/L CaCO ₃

microtest test kits are manufactured in Adelaide, South Australia by:

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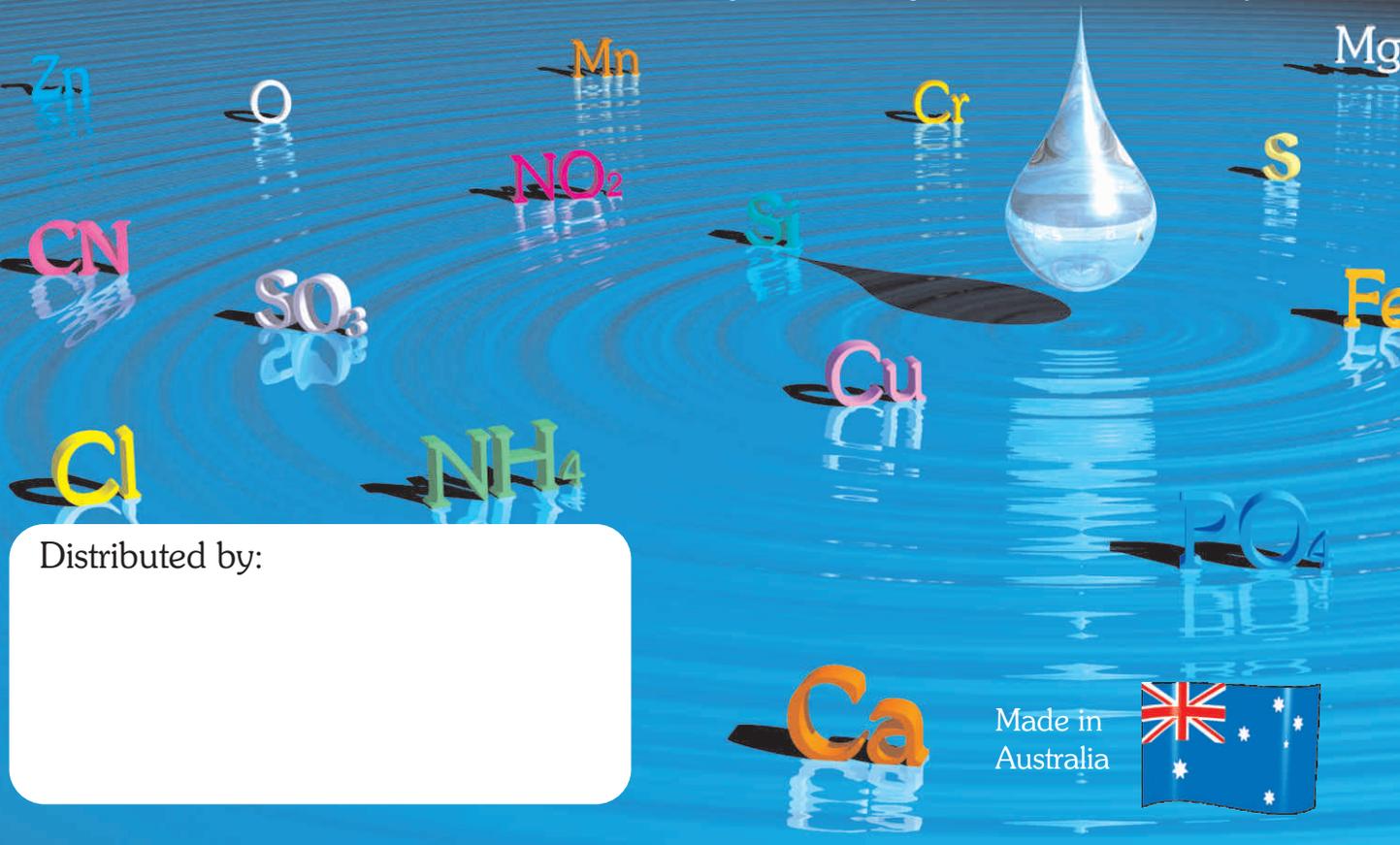


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Test Kits for Chemical Water Analysis

Water quality has become increasingly important in recent years, as water resources are limited and water users demand higher standards but also face more stringent environmental regulations.

Whether it is for occasional water testing or for routine water quality monitoring, **microtest** test kits are the perfect tool for rapid, on-site chemical water analysis.



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microtest test kits have been developed from established standard methods which guarantee best possible accuracy and sensitivity, and minimal interferences from foreign substances. **microtest** test kits are either colorimetric, employing a colour comparator, or use a drop count titration technique. Each test kit is its own small chemical laboratory and contains all necessary reagents and equipment to carry out tests immediately.

As **microtest** test kits require only very small sample sizes - usually 4 or 5 mL per test -, a set of reagents is sufficient for between 50 and 200 tests. Most reagents, indicators, and titration solutions are supplied as liquids in dropper bottles which allow accurate dosage of those reagents in the field. For reasons of stability some reagents come as powders. In these cases a small measuring spoon is enclosed for accurate dosage. Shelf life of reagents is usually two years.

microtest test kits are easy to use and competitively priced.



Applications

microtest kits are being extensively used for water analysis and water quality monitoring in commercial, industrial and environmental applications:

Aquaculture: monitoring of pH, ammonium, nitrite and nitrate in recirculation systems.

Boiler Feed Water: monitoring of p-alkalinity, total hardness, sulphite, iron.

Bore Water: salinity, total hardness, iron, manganese.

Cooling Water: monitoring of salinity and disinfectant residuals.

Drinking Water: total hardness, chlorine residual.

Environmental Monitoring: salinity, pH, phosphate, nitrate, dissolved oxygen.

Food Processing: disinfectant levels.

Irrigation: salinity, total hardness, iron, manganese.

Process Water: total hardness.

Quality Assurance: various parameters.

Waste Water: ammonium, nitrite, nitrate.

Water Softening: residual total hardness.

Titration / Drop Count Tests



Many water constituents, especially those present at higher concentrations, can best be determined by titration. Initially, the sample is treated with a buffer and an indicator. Addition of a titration solution will produce a colour change which indicates a completed reaction. The amount of titration solution needed for this colour change determines the concentration of the compound in question. **microtest** test kits employ dropper bottles which deliver a consistent standard drop size. It is only necessary to count the drops of titration solution until the colour change occurs. This number is then multiplied by a given equivalence factor to produce the final test result.

The nominal measuring range of each kit can be extended by taking a smaller or larger sample volume. In addition to that, for most parameters, several kits are available with titration solutions of different strengths. This enables the user to select the right kit for the expected concentration range in his/her analytical application.



Acidity Alkalinity Calcium Carbon Dioxide
Chloride Chlorine Dissolved Oxygen Nitrite
Residual Hardness Sulphite Total Hardness

Colorimetric Tests



Water constituents which are present at low concentrations cannot be determined by the titration technique. However, most of these substances form coloured compounds with certain organic dyes or can undergo chemical reactions to form dyes themselves. **microtest** test kits contain all the reagents needed in order to carry out these colour reactions quickly and conveniently. The intensity of the colour is proportional to the concentration of the substance in question. Each test kit is supplied with a calibrated colour chart. Comparing the colour in the water sample with the colour chart allows the concentration of the water constituent to be determined.

The measuring range of a colorimetric test kit is determined by the analytical method used. However, with a simple dilution step, the measuring range of each **microtest** test kit can be extended four-fold.



Ammonium Chlorine Chromate Copper
Iron pH Phosphate
Manganese Nitrate Nitrite Sulphide

