

General equipment requirements for use with Megazyme Test Kits

Spectrophotometer Specification:

Megazyme we uses Amersham Ultrospec 4300/5300 spectrophotometers however these models are much more advanced than what is required to simply perform the Megazyme test kits.

Less expensive models are available and since there are so many models to choose from Megazyme cannot recommend a specific model however a good example is the Thermo Scientific Genesys 20 with the single cell holder accessory and separate block heater e.g Stuart Block Heater Model SBH130 Analogue Control 2 Place 130°C plus two heat blocks for cuvettes (see General Equipment below).

The primary requirements of the spectrophotometer should be:

1. Able to read at wavelengths of 340 nm, 492 nm, 510 nm and 578 nm. (Essential)

(Please check the particular kit(s) you wish to use for the required wavelength).

2. Accommodates square cuvettes with a 1 cm pathlength (Essential)

Most of the Megazyme test kits have been developed using 1 cm pathlength glass or plastic cuvettes.

3. A multi-position carousel for simultaneous testing of samples (Not essential).

If measuring many samples a multi-position carousel allows you to test samples simultaneously.

4. Sample temperature incubation (Highly recommended).

Most of the Megazyme test kits have been developed to run optimally at 25°C or 37°C so a temperature controlled is very useful. Without temperature regulation the tests would be running at ambient temperature (usually less than 25°C) and therefore likely to run more slowly than specified by Megazyme though the final result at ambient temperature (~20°C) is still accurate.

For spectrophotometers with a multi-position carousel temperature regulation can be achieved by attaching a waterbath (e.g. Megazyme product G-IBMKIII) with a thermostat pump to the spectrophotometer.

Less expensive spectrophotometers will not have a carousel for simultaneous sample measurement. In this case temperature regulation of the tests can be achieved by incubating the cuvettes in an incubation oven or in a dry block heater (see general equipment below).

General Equipment:

Listed below are examples of other general equipment with approximate prices please note that these prices are in GB Sterling (£) or Euro (€) and you may have to find alternative suppliers in the US.

- Block Heater Model SBH130 Analogue Control 2 Place 130°C (Stuart PX/SBH130 £387) plus two Heat blocks for cuvettes (Stuart PX/SHT1/16 £74 each)
- Brand 3 mL PMMA disposable cuvettes (Fisher Scientific Cat No. CXA. 205 130V; £11.47 for 1000)
- Volumetric flasks (Pyrex glass) approximately £5 – £10 each. These can be sourced from Jencons Scientific Ltd though you may have to look for other suppliers in the US.
- Brand HandyStep Positive displacement pipettor (Fisher Scientific Cat No. PMP 530 010P; £287)
- Brand 5 mL Positive displacement tips (Fisher Scientific Cat No. FB56372; £93 for 100)
- Brand 25 mL Positive displacement tip (Fisher Scientific Cat No. FB56376; £41 for 50)
- Glass test tubes 16 X 100 mm (Jencons Scientific Ltd Cat No. 682-188; £59 for 100)
- Eppendorf or Gilson 20 microL and 100 microL pipettors these can be sourced from Anachem and are approx £200 each.
- Analytical balance Sartorius TE64S (Jencons Scientific Ltd Cat No. 124-029; €1837 or Denver Instrument SI-110; Fisher Scientific Cat No. BFS-525-020U £1295)
- Vortex mixer (Vortex-Genie 2, 120V, 60Hz 0.65 amps; Scientific industries Inc. Cat No.SI-0236; Model G560) approx. \$300