

PARTICLE SIZE DISTRIBUTION



The Australian Water Quality Centre (AWQC) is dedicated to ensuring and responding to the public health requirements relating to the provision of water and wastewater services for communities in Australia and across the world.

—○ Specialist water services

Ensuring public health

Traditionally, turbidity has been used as a simple measure to monitor levels of particulate matter in source and treated waters. While effective, turbidity provides limited information on the composition of the particulate matter.

When turbidity and suspended solids are high, such as in source or waste waters, analysis of particle size distribution by laser light scattering (laser diffraction) provides detail on the volumetric proportion of size fractions in a sample. Measurable size range is from 0.35 to 500 micron in 44 log spaced size classes. The pump and recirculating mixing chamber ensure sample homogeneity and that larger, heavier particles remain suspended and an ultrasonic probe is available for complete sample dispersion. Immediate feedback from the instrument means the sample is always in the optimum range for optical transmissivity – when too low, samples can be diluted prior to analysis.

Liquid optical particle counting

For waters treated to a high quality where turbidity offers insufficient detail or inadequate resolution, laser optical particle counting offers exceptional sensitivity.

We have experience analysing samples from membrane processes (microfiltration to reverse osmosis), conventional treatment processes involving coagulation, sedimentation and filtration, MIEX treatment and distribution systems. This data can provide useful information to assist with treatment plant configuration, identifying filter breakthrough, evaluation of particle removal capabilities, distribution system management and much more.

Two instruments are available for specific particle size ranges, 0.5 to 20 micron or 2 to 125 micron. Both instruments are serviced and calibrated by a NATA accredited laboratory and the technician responsible for maintaining the instruments and undertaking the analysis has been trained at the same facility.

For more information or to arrange analysis please contact the AWQC Customer Service Unit.

Sample requirements:

- 1L PET bottle.
- No air gap.
- Transport and store at 4°C.

Sample requirements:

- 0.35-500 micron for particle size distribution of environmental and waste water samples.
- 20.5-20 micron or 2-125 micron for treated waters and particle counting.

