Wastewater Analysis

Expertise in water and wastewater analysis

Metrohm
Process Analytics

Environmental parameters in the wastewater sector

Automated quality control of water samples

Water is the source and basis of all life. It is essential for metabolism and is essential for our life-support. As a solvent and transporting agent, it carries not only the vital minerals and nutrients, but also, increasingly, harmful pollutants, which accumulate in aquatic or terrestrial organisms. Impurities can be found in almost any kind of water: natural and treated drinking water for processes, and cooling water for use in the pharmaceutical and food manufacturing.

If the concentration of organic contaminants is too high, they may interfere with many industrial processes, leading to problems. For example, an excess of organic matter can lead to microbiological growth; or, disinfecting drinking water can encourage the presence of undesirable byproducts.

Therefore, the treatment of wastewater is a demanding topic and compliance with the legal limits is very important.

Regarding quality control and risk assessment, there is a need in all industries for cost-effective and quick responding instruments and methods.

As a leading manufacturer of instruments for chemical analysis, we at Metrohm Process Analytics offer state-of-the-art systems and complete solutions that allow easy and cost-saving monitoring of your water samples.

Typical matrices for water analysis
• Drinking water
• Surface water
• Process control
• Boiler feedwater
• Cooling water
• Sewage / Rain water
• Effluent
• Steam and condensate
• Desalination plants

Environmental parameters in water analysis
• Cl_2
• NH_4^+-N
• NO_2^--N, NO_3^--N
• pH
• p/m-value
• o-PO_4, PO_4-P
• Heavy metals, e.g. Cr, Fe, Ni, Zn
• SO_4^{2-}
• and many more.

202X - Compact single method online analyzers

Customized for Titration/ISE, pH-measurement or Photometry

In a constant water treatment process, pollutants must be monitored continuously. The 202X process analyzer series provides a reliable and easy-to-maintain 24/7 operation. There are three basic models available for a variety of parameters covering the key requirements of water analysis that helps to reduce costs.

The **2026 Titrolyzer** can perform potentiometric titrations, measurements with ion-sensitive electrode (ISE) or pH determination (**2026 pH Analyzer**). In harsh industrial processes, in-situ pH sensors are prone to deteriorate without the capability for automatic cleaning. However, the 2026 Titrolyzer can perform pH measurements batchwise with automatic cleaning and calibration.

202X Process Analyzer:
For titration, ISE, pH, and photometry

Features of the 202X Process Analyzer

- Titration or photometric measurements in up to 2 sample streams
- Online pH-measurement with automatic cleaning and calibration
- Highly sensitive photometric measurement, typically in the low µg/L
- Compact footprint for constricted areas
- Complete separation of the wet and electronic parts
- Analyzer housing rated IP 66

The high-performance single-method analyzers are equipped with high-resolution dosing systems for precise and reproducible results, even in the trace range.

The **2029 Process Photometer** was specifically designed for photometric absorption measurements in the visible light range.

Thanks to the differential absorbance photometry technique, any color on the sample background that could interfere with the measurement is eliminated.

An intuitive user interface allows easy control of the analyzers. The programs are adapted to the individual needs of the user and the data can be retrieved at any time. Thus, not only analysis results, but also alerts are managed easily and fast responses from the control room at load peaks are allowed.

Water analysis parameters measured by 202X Process Analyzer

- Alkalinity
- Aluminium
- Ammonium / Ammoniia
- Calcium, Magnesium
- Chlorine
- Chromium
- Cyanide
- Iron
- Hardness
- Copper
- Manganese
- Nickel
- Nitrate
- Nitrite
- pH-value
- p/m-value
- Phenol
- Phosphate
- Silicate
- Zinc
- and many more.

2035 Process Analyzer

For potentiometric, photometric, or thermometric determinations

Metrohm Process Analytics offers with the 2035 Process Analyzer an intelligent system for 24/7 online monitoring of water and wastewater, as well as complex industrial processes.

Whether you need to monitor chemical parameters in a single stream or in several streams, the 2035 process Analyzer allows both.

The 2035 Process Analyzer is available in three basic configurations: potentiometric, photometric, and thermometric. Any of these can be combined with additional techniques such as pH and/or conductivity measurement for a complete water profile.

Different analyte concentrations like those for example at the inlet and outlet can be easily analyzed in one system. Numerous modules with burettes, pumps, measuring vessels, and valves ensure a precise analysis of critical parameters.

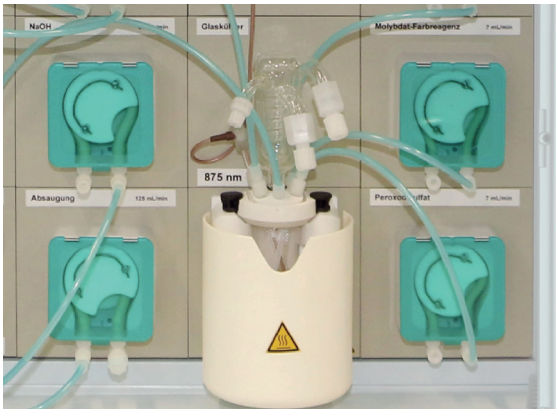
A variety of solutions for sample preparation complete the portfolio. For example, it is possible to monitor both the orthophosphate phosphorus and total phosphate content after wet chemical digestion with one system.

The 2035 Process Analyzer is the system of choice for analyzing complex or organic wastewater, delivering reliable results even in the most challenging environments.

2035 Process Analyzer:
A versatile, process analyzer

Features of the 2035 Process Analyzer

- Versatility and flexibility to fit almost any application
- High accuracy for lower detection limits
- Multi-parameter system, i.e. analysis of different parameter in one system
- Thermometric option for difficult, aggressive matrices
- Monitor multiple sample streams
- Complete separation of the wet and electronic parts
- Automatic calibration option and remote operation capabilities



To monitor both ortho- and total phosphate-phosphorus a photometer along with a compact digestion cuvette is used.

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