

2029 Ammonia Analyzer

From Metrohm Process Analytics

Over 85% of globally manufactured ammonia (NH₃) is used to produce fertilizers for the agricultural sector, and since 2015 the global supply capability of NH₃ has increased by more than 9% (FAO). Increased use of fertilizers can cause environmental problems, and there is a high demand to measure NH₃ at all kinds of locations. The majority of all online ammonia measurements are performed in wastewater treatment plants (WWTP), as there can be heavy fines from authorities for exceeding discharge limits. Ammonia is also used in different industrial processes as a precursor for most nitrogen-containing compounds.

Because of its role in many different production and environmental processes, it is of vital importance to closely monitor the concentration. The **2029 Ammonia process analyzer** from Metrohm Process Analytics is the most straightforward and easy-to-use tool to do so online.

About the Ammonia application

Ammonia is determined photometrically based on the Berthelot method, measured at a wavelength of 650 nm. The analyzer is able to handle a wide range of ammonia concentrations, from **µg/L to mg/L**.



Benefits for online analysis

- Protect expensive company assets by monitoring your processes
- Process data available at your fingertips 24/7 means no waiting for slow, manual laboratory methods
- Increased safety for employees – no manual sampling necessary, no exposure to dangerous environments
- Save money by reducing downtime: analyzer sends alarms for out-of-specification values which inform the operator sooner

Applications for NH₃

- ... in drinking water production / (potable water)
- ... in the cooling water circuit / (energy/power)
- ... in the sour water stripper (SWS) / (petrochemical)
- ... in the coking process / (steel/metals)
- ... in brine for Soda Ash production / (chemical)
- ... in fermentor cultures / (biochemistry)
- ... in effluent streams (WWTP) / (several industries)

NH₃ analysis performed safely online

- Ammonia can be measured in 1 or 2 sample streams
- Compact footprint for tight industrial spaces: 326 x 273 mm
- Safe, rugged enclosure designed to IP66 specifications is ideal for process environments
- A 7" full color touchscreen shows trend graphs and allows action modifications
- Remote access and control via Ethernet and Modbus TCP/IP, with USB for data export
- Easy maintenance due to simplicity of the layout
- Automatic data and/or alarm transfer to a DCS system



For more information, visit our website: www.metrohm.com

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2029 Copper(I & II) Analyzer

From Metrohm Process Analytics

Due to the physical properties of copper, it is mainly utilized for electrical applications. Copper can be found in the wiring as well as in printed circuit boards (PCBs) and chips. Many other purposes vary from use as an animal nutrient to the creation of metal alloys (bronze, brass). The amount of Cu(I & II) in wastewater is restricted and many industries measure the concentration before disposing the water or treating it. The copper in the sludge formed by wastewater treatment plants (WWTP) is removed in sludge incineration or waste incineration plants. Depending on the type of industry, effluent cannot exceed concentrations >1 mg/L of copper.

Because of its role in many different production and environmental processes, it is of vital importance to closely monitor the concentration. The **2029 Copper(I & II) process analyzer** from Metrohm Process Analytics is the most straightforward and easy-to-use tool to do so online.

About the Copper(I & II) application

Copper is determined photometrically based on the Bicinchoninate method, measured at a wavelength of 550 nm. The analyzer is able to handle a wide range of Cu(I & II) concentrations, from **µg/L to mg/L**.



Benefits for online analysis

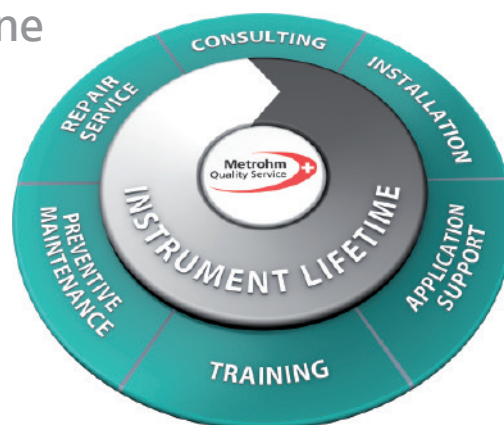
- Protect expensive company assets by monitoring your processes
- Process data available at your fingertips 24/7 means no waiting for slow, manual laboratory methods
- Increased safety for employees – no manual sampling necessary, no exposure to unsafe, hazardous environments
- Save money by reducing downtime: analyzer sends alarms for out-of-specification values which inform the operator sooner

Applications for Cu⁺/Cu²⁺

- ... in electrolysis baths / (metals/galvanic)
- ... in the development of PCBs / (semiconductor)
- ... in the smelting process / (mining)
- ... in surface water monitoring / (environmental)
- ... in production of copper products / (metals)
- ... in development of bead wire for tires / (automotive)
- ... in effluent & scrubbing towers / (industrial wastewater)

Cu⁺/Cu²⁺ analysis performed safely online

- Copper(I & II) can be measured in 1 or 2 sample streams
- Compact footprint for tight industrial spaces: 326 x 273 mm
- Safe, rugged enclosure designed to IP66 specifications is ideal for process environments
- A 7" full color touchscreen shows trend graphs and allows action modifications
- Remote access and control via Ethernet and Modbus TCP/IP, with USB for data export
- Easy maintenance due to simplicity of the layout
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2029 Phosphate Analyzer

From Metrohm Process Analytics

Elemental phosphorus is highly reactive and thus binds easily to oxygen, forming phosphates (ortho-phosphates o-PO_4 , poly-phosphates, and organic phosphates). Phosphates in water sources can come from minerals, detergents, agricultural (fertilizer) runoff, and other anthropogenic influents. Environmental agencies have strict regulations regarding industrial phosphate emissions. In the treatment facility it is important to know the phosphate concentration in the influent stream either to feed the bacteria for biological treatment or to calculate the amount of reagents needed for chemical treatment.

Because of its role in many different production and environmental processes, it is of vital importance to closely monitor the concentration. The **2029 Phosphate process analyzer** from Metrohm Process Analytics is the most straightforward and easy-to-use tool to do so online.

About the Phosphate application

Depending on the desired measurement range ($\mu\text{g/L}$ to mg/L), o-PO_4 can be determined photometrically with the Vanadate-molybdate method (405 nm), or with the Molybdenum blue method (875 nm).



Benefits for online analysis

- Protect expensive company assets by monitoring your processes
- Process data available at your fingertips 24/7 means no waiting for slow, manual laboratory methods
- Increased safety for employees – no manual sampling necessary, no exposure to unsafe, hazardous environments
- Save money by reducing downtime: analyzer sends alarms for out-of-specification values which inform the operator sooner

Applications for o-PO_4

- ... in boiler feed and cooling water / (energy/power)
- ... in fertilizer production / (chemical)
- ... in development of soft drinks / (food/beverage)
- ... in the production of detergents / (chemical)
- ... in drinking water treatment / (potable water)
- ... in surface water monitoring / (environmental)
- ... in effluent streams (WWTP) / (several industries)

o-PO_4 analysis performed safely online

- Ortho-phosphate can be measured in 1 or 2 sample streams
- Compact footprint for tight industrial spaces: 326 x 273 mm
- Safe, rugged enclosure designed to IP66 specifications is ideal for process environments
- A 7" full color touchscreen shows trend graphs and allows action modifications
- Remote access and control via Ethernet and Modbus TCP/IP, with USB for data export
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