

● ALUMINUM

EZ Series: Continuous Monitoring of Aluminum

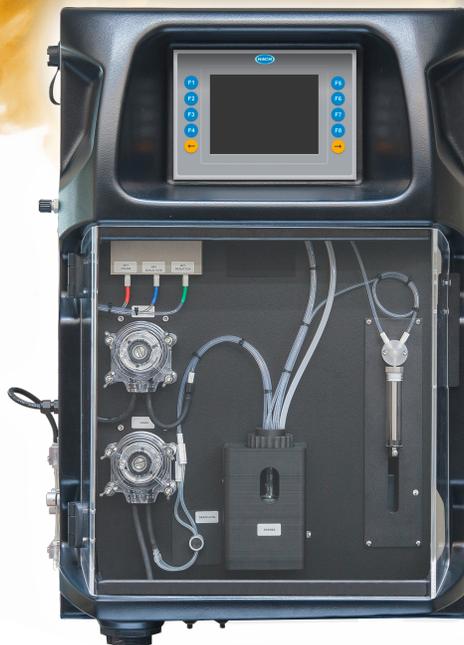
Key Applications: Flocculation in drinking / process water production, and wastewater treatment

Aluminum is the most abundant metallic element on earth. Salts of aluminum are employed as coagulants, aiding in the removal of organic matter, pathogens and a variety of inorganic species. High levels of aluminum are undesirable in drinking water because of the effect on color, and also because of health concerns. Similarly, raised levels can cause problems in industrial processes, where water and steam can create deposits and scaling.

Features EZ1000 and EZ2000 Series Analyzers

- Continuously monitor Total Aluminium and Dissolved Aluminum
- Accurate at low levels starting at 10 µg/L
- Multiple stream analysis (1-8 streams)
- Analogue and digital communication options

**Explore the full range of parameters and technologies.
Call your Hach representative today, or visit
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The Why, Where and How of Aluminum Monitoring

About

Aluminum coagulants are widely used. Their effectiveness arises from their ability to form multi-charged polynuclear complexes with enhanced adsorption characteristics. Aluminum salts therefore flocculate suspended particles in water causing them to settle, and thereby aiding in sedimentation.

Regulatory

The EU Drinking Water Directive 98/83/EC includes a standard for Aluminum in Annex 1, Part C 'Indicator Parameters' of 200 µg/L.

The US EPA has established Secondary Maximum Contaminant Levels (SMCLs). These are not federally enforceable, so public water treatment facilities are not necessarily required to monitor them unless required to do so at a State level. The federal SMCL for aluminum is 50 to 200 µg/L.

Aluminum in Water Treatment Processes

Complaints: Color or cloudiness in tap water is one of the most common causes of drinking water complaints from members of the public. The handling of these complaints, and the implementation of investigation and remediation measures, can be very expensive. Turbidity monitors can help to raise alarms so that action can be taken to divert cloudy water from the distribution network, but turbidity can be caused by a wide range of issues, whereas raised aluminium levels are most likely to have been caused by a problem with water treatment chemicals.

Scaling: Aluminum can be present as aluminium hydroxide, a residual from the use of alum (aluminum sulphate) or as sodium aluminate from clarification or precipitation operations. The presence of these chemicals has been known to cause deposits in cooling systems and to contribute to boiler scale. Aluminum may also precipitate at normal drinking water pH levels and accumulate as a white gelatinous deposit.

Coagulant cost reduction: By monitoring residual levels of aluminum in treated water, it is possible to ensure that over-treatment does not take place. The dosing of coagulants should meet the need of the water because excessive dosing would result in high residual Aluminum levels and wasted cost.

Aluminum Monitoring Solutions

EZ1000 and EZ2000 Series colorimetric Aluminum Analyzers are available in several models:

EZ1001	Aluminum Al(III), dissolved
EZ2000	Aluminum, total
EZ2300	Aluminum, total & AluminumAl(III), dissolved

Standard measuring range: 10 - 150 µg/L

Options

- Selection of different measuring ranges to match your application
- Monitoring of up to 8 sample streams per analyzer, reducing cost per sampling point
- Calibration to 50% of standard range
- Internal dilution
- Analogue and/or digital outputs for communication
- Self-cleaning sample preconditioning panel