

● FLUORIDE

EZ Series: Continuous Monitoring of Fluoride

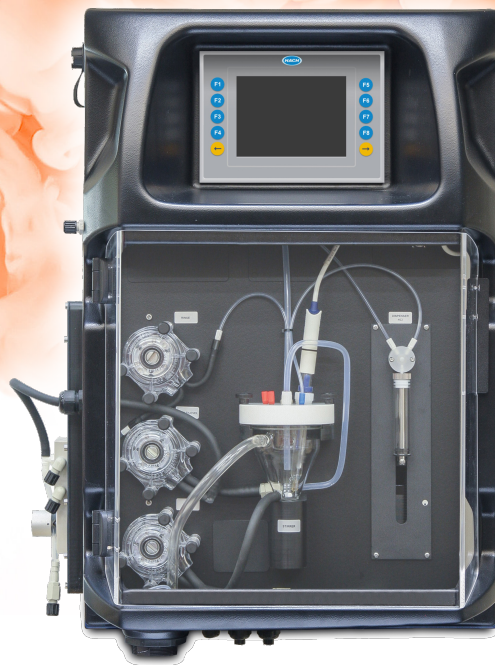
Key Applications: Production and treatment of drinking water, industrial wastewater treatment

Fluoride can come from natural sources like leaching from Fluoride containing minerals and volcanic ash or human-made from coal fires, fertilizer run-off, fluoridated drinking water or dental products, and of course industrial production. Excess Fluoride levels in drinking water or food are undesirable as chronic exposure may lead to Calcium leaching from bones and teeth. Monitoring the level of fluoridation in drinking water and respectively the success of the removal process in wastewater is essential to ensure compliance.

Features EZ3000 Series Analyzers

- Continuously monitor Fluoride using ISE technology
- Accurate at low levels starting at 0.1 mg/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 Fluoride Monitoring

About

Hydrofluoric acid is extremely corrosive. This makes it so valuable as a glass and silica etchant and for etching purposes in the semiconductor industry. Solar cells, nanotechnology, aluminum finishing and metal plating require Fluorine chemicals. Burning coal or waste results in Fluoride contaminated water from precipitation and flue gas scrubbing. There are also many materials and items of daily use like toothpaste and other dental products, outdoor clothing or anti-adhesive pans that are produced with Fluorine containing substances. In some regions, Fluoride is added to drinking water as a preventive health measure.

Regulatory

The EU Council Directive 98/83/EC limits Fluoride in drinking water to 1.5 mg/L. Wastewater standards for indirect dischargers vary between industries from 6 – 50 mg/L.

The US Environmental Protection Agency (EPA) lists Fluoride as a secondary contaminant and recommends that drinking levels remain below 2.0 mg/L. In wastewater, typical limit values are 20 mg/L for indirect dischargers and 2 – 5 mg/L for direct dischargers.

Fluoride in Drinking Water production

While there is some controversy regarding the health benefits of artificial fluoridation there is consent that excess Fluoride levels in drinking water cause discolouration of teeth and fluorosis.

Fluoride in Industrial Wastewater

Depending on the industry Fluoride contamination in wastewater may reach levels as high as 10 g/L. Treating the wastewater with lime and alum will precipitate the Fluoride. Close monitoring is essential to save precipitants and avoid costs by excess sludge forming.

Fluoride Monitoring Solutions

EZ3000 Series Fluoride Analyzers use ion-selective electrode technology and are available in several models:

EZ3007	Fluoride, direct ISE analysis, for drinking water and surface water
EZ3507-3508	Fluoride, ISE with standard addition for wastewater and process water

Options

- Selection of different measuring ranges and methods to match your application
- Monitoring of up to 8 sample streams per analyzer, reducing cost per sampling point
- Analogue and digital communication options
- Self-cleaning sample preconditioning panel