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| Aluminum monitoring for wastewater treatment | |
| Reliable analysis from high to low concentration ranges | |
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Herisau, October 2021.  
Aluminum salts can be used in wastewater treatment as coagulation agent and flocculant. However, because of its toxic effect on fish, it important to remove aluminum efficiently before the treated water is released into the environment. Metrohm offers a solution to analyze the aluminum content both in the flocculant according to the newly revised standard ABNT NBR 11176 and in the treated water before discharge by adsorptive stripping voltammetry. This allows the monitoring of the aluminum content throughout the whole wastewater treatment process.

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| Aluminum salts, such as aluminum sulfate and polyaluminum chloride (PAC), are used as coagulation agent and flocculant for treatment of overloaded wastewater.  For efficient wastewater treatment, the knowledge of the exact amount of aluminum, expressed as aluminum oxide (Al2O3) in the flocculant, is essential. This can be achieved rapidly and reliably by [thermometric titration](https://www.metrohm.com/en/products/titration/titrotherm/) of the aluminum with sodium fluoride according to the newly revised standard ABNT NBR 11176. To learn more about this analysis, download our [Application Note AN-T-224](https://www.metrohm.com/en/applications/AN-T-224). |  |

Aluminum has a toxic effect on fish in acidic water and must therefore be removed before the release of the treated water into the environment. The European Union stipulates the monitoring of aluminum as an indicator parameter with a maximum content of 200 µg/L. In the United States, the secondary drinking water regulations limit the aluminum content to maximum values of 50–200 µg/L. Adsorptive stripping voltammetry (AdSV) allows the measurement of concentrations as low as 5 µg/L.

Compared to atomic absorption spectroscopy (AAS) or Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), [voltammetry](https://www.metrohm.com/en/products/voltammetry/professional-va-cvs-instruments/) is a viable alternative with only moderate investment in hardware required and low running costs. To learn more about the method, download our free [Application Bulletin AB-131](https://www.metrohm.com/en/applications/AB-131) on this analysis.

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About Metrohm  
Metrohm is one of the world’s most trusted manufacturers of high-precision instruments for laboratory and process analysis. The company was founded in 1943 by engineer Bertold Suhner in Herisau, Switzerland, where it is headquartered to this day. Metrohm offers a compre-hensive portfolio of analytical technologies ranging from titration and ion chromatography to near-infrared and Raman spectroscopy, as well as several other techniques. Metrohm sells its products and provides services through its own local subsidiaries and exclusive distribu-tors in more than 120 countries worldwide. Our mission in a nutshell is helping customers from virtually every industry analyze and maintain the quality of their products at every stage in the manufacturing process and beyond. Since 1982, Metrohm has been owned 100% by the non-profit Metrohm Foundation. This foundation keeps to its purpose to support charitable, philanthropic, and cultural projects in eastern Switzerland and, above all, ensure the independence of the company.

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