



Coagulation Webinar Description

Coagulation is one of the most critical—and often misunderstood—processes in water and wastewater treatment. While it is commonly described as simple charge neutralization, effective coagulation depends on a complex interaction of particle chemistry, mixing energy, water quality, and coagulant selection.

This course provides a practical, operator-focused understanding of coagulation, beginning with the fundamentals of colloidal stability, turbidity, and zeta potential. Participants will learn how chemical, mechanical, and thermal forces influence particle behavior, and why destabilizing these particles is essential for effective clarification and solids removal.

The course examines the full range of coagulants, including aluminum, iron, calcium-based, and organic products, with emphasis on when and why each should be used. Advanced concepts such as enhanced coagulation and sweep coagulation are explained in operational terms, helping participants connect theory to real-world performance.

In addition, the course focuses on the factors that determine success in the field—proper dosing, feed rate calculations, and mixing intensity. Participants will learn how to evaluate coagulation performance, adjust for changing water conditions, and troubleshoot issues such as poor settling, high turbidity, and ineffective solids removal.

Through practical examples and applied calculations, attendees will gain the tools needed to optimize coagulant use, improve treatment efficiency, and make more informed process control decisions.