

Success Story

Discharge Compliance

Situation:

The customer applied for a wastewater discharge permit for a new cathodic electrocoat paint line. The water effluent from this new operation falls under the Federal EPA Metal Finishing Effluent Guidelines, 40 CFR Part 433. The regulations cover wastewater discharges from a wide variety of industries performing various metal finishing operations. About 44,000 facilities perform various metal finishing operations and discharge process wastewater directly to surface waters or indirectly to surface waters through POTW's (public owned treatment works).

In addition to the Federal EPA Finishing Effluent Guidelines, the local POTW placed additional restrictions in the wastewater permit which created unique challenges in designing a chemical wastewater treatment program.

The local POTW restrictions included surcharges for total phosphorus discharge over 10 mg/l and a permit violation for over 57 mg/L of total phosphorus discharge. In addition, the daily maximum limit of chloride in the permit was 1600 mg/L making the selection of the correct coagulant challenging.

The surface pretreatment process at the customer, prior to the wastewater treatment system, uses the regulated metal zinc and contains phosphates. The normal approach in dealing with influent rich in zinc and phosphate is a ferric chloride coagulant, such as **CORCAT W84L**.

Common coagulant treatment products have a chloride component (ferric chloride, aluminum chloride, calcium chloride) which by their very use, there is a likely possibility of exceeding the chloride discharge limit in the permit. This unique chloride limit would require a different approach to the wastewater treatment process.

Solution:

Alliant Chemical designed a chemical treatment process to meet these unique restrictions, that would use an unique sodium aluminate-based coagulant, **CORCAT W95L**. In combination with **CORCAT W85L** coagulant, the combination of both coagulants would create a wastewater treatment process that would meet these unique restrictions and be robust enough to handle variations in the incoming influent.

Results :

The local POTW completed an independent compliance sampling of the outfall (discharge) from this process. The results from the chemical wastewater treatment process are compliant with the discharge requirements in the discharge permit. There are no violations or surcharge issues from this wastewater treatment process.

