



Case study Neutralac® SLS45

Steel wheel manufacturing Optimization of wastewater treatment

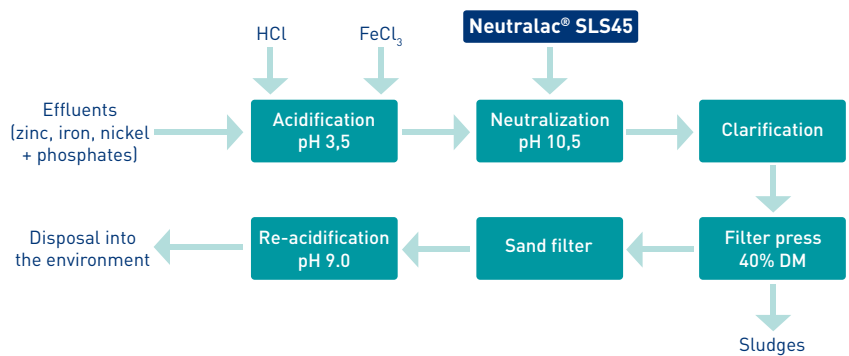
Customer Application and Activity

Hayes Lemmerz International is a world leader in the production of steel and aluminium wheels for the automotive industry. Its site in Königswinter, Germany, specializes in the manufacture of steel wheels and has a daily discharge of 150m³ of effluents containing zinc, iron and nickel, as well as phosphates.

Problem to be solved

The on-site treatment station was regularly disrupted by an excess of solids in suspension. Moreover, downtime in the plant resulted in unpleasant odours being produced. A solution was sought to:

1. Optimize the elimination of phosphates and heavy metals in the effluents
2. Avoid solids forming in suspension
3. Eliminate odours.



Neutralac® SLS45 Solution

Rheinkalk, the Lhoist Group's German affiliate, suggested treatment with Neutralac® SLS45 in order to capture the heavy metals and neutralize the effluents. Neutralac® SLS45 comes as a fast acting, ready-to-use suspension of 45% solids that is delivered at a viscosity below 300cP. It improves the precipitation of heavy metals, as well as filter cake moisture content and porosity. A series of laboratory tests were performed to validate the technique, and the positive results obtained resulted in the consequent induction of Neutralac® SLS45 at the Hayes Lemmerz premises. This new treatment has led to a continuous improvement in the process.



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Key Achievements

Switching over to Neutralac® SLS45 has led to several benefits for Hayes Lemmerz:

1. Faster removal and superior elimination of zinc, iron and nickel
2. Optimum elimination of the solids held in suspension thanks to better sedimentation after neutralization
3. A lower consumption of flocculants (FeCl_3).
4. A filter cake which is more easily detachable from the filter press
5. A major increase in the percentage of dry matter in the sludges
6. Elimination of phosphate build-up through the precipitation of an easily removable calcium phosphate
7. A reduction in the frequency of reagent deliveries and associated transport costs



Conclusions

Since its switch to Neutralac® SLS45 several years ago, Hayes Lemmerz has been treating its effluents successfully. The use of Neutralac® SLS45 has targeted major requirements including:

1. Optimized elimination of phosphates and heavy metals
2. Improved filter cake quality
3. Enhanced effluent treatment at a reduced cost through lower reagent consumption