



Case study Neutralac® SLS45

Precipitation of aluminum and phosphates in effluents treated by membrane filtration

Customer Application and Activity

Decoral specializes in treating technical components made from aluminium and titanium through treatment steps such as anodizing and polishing.

The effluents from its surface treatment plant at the St-Julien-en-Genevois factory in France are mainly contaminated with aluminium and phosphates.

Problem to be solved

Decoral was keen to simplify the management of its products to the greatest degree possible and was eagerly seeking a single product for treating its effluents. Its objectives were to:

1. Avoid preparing a calcium chloride (CaCl_2) solution
2. Limit the use of caustic soda (NaOH) for safety reasons
3. Keep membrane filtration performance unaltered

Neutralac® SLS45 Solution

After inspecting the technical capabilities of the customer's site, Lhoist implemented Neutralac® SLS45 as a ready-to-use liquid reagent. At a viscosity of less than 300cP it is more fluid than any other liquid lime, making it easy to be pumped and dosed into the effluent plant. Utilised at a concentration of 600g of $\text{Ca}(\text{OH})_2$ per liter, its high reactivity (KIWA T90 < 5sec) and ease of implementation provided the necessary alkalinity and calcium required for the efficient removal of pollutants without increasing the salinity of the effluents.

Key Achievements

The incorporation of Neutralac® SLS45 into the effluent treatment process has yielded several benefits for Decoral:

1. 5 fewer CaCl_2 preparations per week
2. Reduced water consumption by 200m³ per year
3. Treatment costs reduced by 30%
4. Better quality sludges

Conclusion

Following on from a successful Field Trial, Neutralac® SLS45 has been fully integrated into the plant's automated systems. Neutralac® SLS45 has met Decoral's aspirations of utilising a single reagent to address several issues in their effluent treatment procedure by:

1. Delivering effective effluent treatment at a lower cost, through elimination and reduced consumption of other reagents
2. Being a liquid reagent that did not harm the existing membrane process
3. Providing an easy to use reagent that is safe to use

