

Enviro-Syn[®] HCR[®] Modified Acid[™] provides safe, effective neutralization of alkaline cleaning agent in brewery application

Drammen, Norway

CHALLENGE

Sodium hydroxide (NaOH) is used as an alkaline chemical cleaning fluid for process equipment (tanks and pipes) in breweries to remove organic scale. After cleaning, the NaOH is pumped to a storage tank and needs to be neutralized before discharge. A Norwegian brewery used 32% hydrochloric acid (HCl) for this neutralization process causing significant issues such as corrosion on metal surfaces, fuming, and damage to seals and gaskets. This required frequent (every 3 months) and time-consuming maintenance.

SOLUTION

Enviro-Syn[®] HCR[®] Modified Acid[™] technology provides a safe, effective alternative to mineral acids, such as hydrochloric, sulfuric, nitric and phosphoric acids, to provide an improved health, safety and environmental (HSE) profile. HCR series products greatly reduce the hazardous effects of conventional strong acids, such as fuming and corrosive effects on skin and equipment, through superior control of reaction rates while providing many technical and operational benefits.

- ✓ Outstanding HSE profile
 - Non-corrosive to skin
 - Low fuming
 - Biodegradable
- ✓ Ultra-low metal corrosion
- ✓ Compatible with typical elastomers
- ✓ Linear pH control
- ✓ Methodical, controlled spend rate
- ✓ Minimal to no exothermic reaction when mixed with water
- ✓ Higher spent pH than strong acids



RESULTS

The brewery switched from using HCl to Enviro-Syn HCR, greatly minimizing HSE hazards such as fuming, as well as corrosion of both metals and material damage (gaskets and seals). Additionally, the maintenance interval was increased from every 3 months to once a year. With similar abilities to 15% HCl in concentrate, the volume of Enviro-Syn HCR consumed was 40 – 50 m³ per year, which is equivalent to the volume of HCl used previously.

Based on the successful results, the brewery plans to continue using HCR Modified Acid to neutralize their alkaline chemical cleaning fluids prior to discharge.