Question 97: What is your optimal pH for wet gas scrubber water and how is this maintained? What are the implications of too high or too low pH?

Jim Norton and **Chris Steves** (Norton Engineering)

The optimum pH for a wet gas scrubber treating FCC flue gas is 6.9 to 7.1. This pH is maintained by the controlled addition of sodium hydroxide. The flow rate of sodium hydroxide is usually set up with a cascaded set point from a pair of redundant pH probes. This optimum pH is based on operating with bisulfite buffering. At higher pH, caustic consumption will increase as CO2 will be neutralized in addition to SO2. It should be noted that sometimes it is necessary to operate at the high pH of the bicarbonate buffering point if there is high excess O2 in the FCC flue gas. Under oxidizing conditions, the bisulfite species is not stable. If on the other hand, the pH decreases, SO2 removal will decrease. The SO2 slip starts to increase significantly below a pH of 6.0. If this pH continues to drop, it will also contribute to accelerated corrosion.

Tags

Process

Year

2014