

Update on the Abart Gas Treatment Center Technology

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Abstract

The Abart (Aluminium Best Available Recovery Technology) is well known in the Aluminium industry and more than 1000 gas treatment modules have been installed worldwide. In some cases up to 34 modules have been assembled into large centralized gas treatment centers (GTCs). Since the first installations the technology has continued to evolve including new step changes in gas cooling technology (HEX), alumina distribution (Alfeed) and the compact Abart-C technology. Abart- C provides more flexible solutions that can be especially beneficial for retrofit and expansion projects, and can include an integrated SO₂-scrubber. The paper will focus on the various technologies involved such as integrated silos for alumina handling, fan integration, gas and alumina distribution, and gas cooling. Scaling and erosion are challenges within the GTCs, and can affect the performance of the individual components and modules comprising the GTC. In addition, although more rarely, upset conditions within individual modules can occur if there are mechanical issues with, e.g., air fluidization devices. A new method for gas sampling and detection of upset process conditions will be discussed including a patented early warning detection system based on SO₂ gas sampling from the individual Abart modules.

Keywords: Gas Treatment Center; Abart; Alfeed alumina distribution; HEX gas cooling technology, Sniffer.