



AAI Analyzers in Acetone and Phenol Production

Acetone and phenol are two of the most commonly produced organic chemicals in the world. With annual manufacturing capacities topping five billion and seven billion kilograms respectively, each compound serves as a foundation to a growing number of valuable products, including epoxies, detergents, paint thinners, and pharmaceutical products. In fact, both compounds are manufactured alongside one another in the Cumene Process.

Isopropyl benzene, more commonly referred to as cumene, is a very popular compound used to create intermediates for many other chemicals—primarily acetone and phenol. To ensure best control, many production facilities utilize several online stream composition analyzers within the comprehensive manufacturing process.

The Cumene Process is initiated by a reaction of vaporized benzene and propylene, which yields a 50/50 stream of cumene and benzene. Here, instant knowledge of stream compositions provides an accurate indication of reaction efficiency, and is used to control reflux rates for maximum cumene recovery. Likewise, monitoring di-isopropyl benzene, benzene, and APHA color further downstream helps to ensure efficient cumene separation as well as meet quality control specifications. In the final oxidation and purification steps, both acetone and phenol recovery streams are measured.

Applied Analytics, Inc. offers online analyzers for all of the required measurement points of the Cumene Process. For over twenty years, the largest chemical companies in the world have trusted the Applied Analytics OMA-300 online analyzer to monitor a range of compounds in a number of chemical process streams. Using UV-Vis and IR absorbance spectroscopy, the OMA-300 has been engineered to deliver accurate stream compositions with quick response times—ideal for minimizing delay times in process control models.

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